

TREE PRESERVATION AND LANDSCAPE MANUAL



CITY OF GREENSBORO

**DEPARTMENT OF PLANNING
GREENSBORO, NORTH CAROLINA
336.373.2144
June 18, 2008**

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INTRODUCTION

The City of Greensboro has a diverse and abundant cover of trees and vegetation. This vegetation creates aesthetic, environmental, economic and social benefits in our community which contribute to the growth and economic prosperity of the City. However, the growth and development attracted to the City of Greensboro often requires the removal of trees and other plant material, thereby depleting a most valuable resource. The Landscaping and Tree Preservation Ordinance is designed to protect, preserve and restore this valuable asset. In 1992 the City adopted the Landscape Ordinance and, in October of 2000, the City Council adopted the Tree Preservation amendments added into the existing Landscape Ordinance text.

The purpose of this document is to facilitate the use of the Landscape and Tree Preservation Ordinance by providing illustrations of key text requirements. The illustrations and the explanations are intended to help the user understand the ordinance and to suggest possible design alternatives.

The original Landscape Ordinance was adopted on July 1, 1992. The Tree Preservation requirements were added and adopted on October 17, 2000 and the Tree Preservation and Landscape Ordinance was further amended and adopted on August 19, 2003 and June 18, 2008.

THE VALUE OF TREES TO A COMMUNITY

The following are some facts on just how important trees are in a community setting.

- "The net cooling effect of a young, healthy tree is equivalent to ten room-size air conditioners operating 20 hours a day." -U.S. Department of Agriculture
- "Trees can boost the market value of your home by an average of 6 or 7 percent." -Dr. Lowell Ponte
- "Landscaping, especially with trees, can increase property values as much as 20 percent." - Management Information Services/ICMA
- "One acre of forest absorbs six tons of carbon dioxide and puts out four tons of oxygen. This is enough to meet the annual needs of 18 people." -U.S. Department of Agriculture
- "There are about 60 to 200 million spaces along our city streets where trees could be planted. This translates to the potential to absorb 33 million more tons of CO₂ every year, and saving \$4 billion in energy costs." -National Wildlife Federation
- "Trees properly placed around buildings can reduce air conditioning needs by 30 percent and can save 20 - 50 percent in energy used for heating." -USDA Forest Service
- "Trees can be a stimulus to economic development, attracting new business and tourism. Commercial retail areas are more attractive to shoppers, apartments rent more quickly, tenants stay longer, and space in a wooded setting is more valuable to sell or rent." -The National Arbor Day Foundation
- "Shade from trees could save up to \$175 per year (per structure) in air conditioning costs." -Dr. Lowell Ponte
- "Healthy, mature trees add an average of 10 percent to a property's value." -USDA Forest Service
- "The planting of trees means improved water quality, resulting in less runoff and erosion. This allows more recharging of the ground water supply. Wooded areas help prevent the transport of sediment and chemicals into streams." -USDA Forest Service

CONTACT INFORMATION

VISIT OUR WEBSITES AT:

<http://www.greensboro-nc.gov/departments/Planning>
<http://www.greensboro-nc.gov/departments/Planning/forestry/>

FOR LANDSCAPE QUESTIONS:

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OR

Nicole Ward
Plan Review Coordinator
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FREQUENTLY ASKED QUESTIONS

Q. I DON'T NEED TO GET A GRADING PERMIT. DO I STILL NEED TO GET A TREE DISTURBANCE PERMIT?

Yes, if you are cutting trees on the property and the property is not exempt (see exemptions), you will need to get a tree disturbance permit. Single family residential is exempt and does not need a tree disturbance permit.

Q. I NEED TO GET A GRADING PERMIT. DO I NEED TO GET A TREE DISTURBANCE PERMIT TOO?

If you have an approved site plan, no. If you do not have an approved site plan, yes.

Q: WHAT IS A TREE DISTURBANCE PERMIT?

A tree disturbance permit allows a property owner to remove trees from their property that is not part of a development plan or a forest management plan. The property owner is required to keep a buffer of trees around the property line. The size of the buffer is based on the size of the property. Contact the Urban Forester for specific requirements.

Also note that a tree disturbance permit is not the same thing as a grading permit and a grading permit may also be required. Contact the Erosion Control Division of the Engineering and Inspections Department at 373-2030.

Q: WHAT IS A PLANTING YARD?

A planting yard is a strip of land (of various widths) provided along the perimeter of a site for the installation of plant material in a combination of canopy trees, and/or understory trees, and shrubs. To determine required width and the planting rate for trees and shrubs see Table 30-5-4-2 in the Development Ordinance.

Q: WHAT IS A "LAND USE CLASSIFICATION" OR "LUC"?

A Land Use Classification (LUC) is a numeric value between #1 and #5 that has been established for each type of land use permitted within the City of Greensboro. The number can be found in the last column in the permitted use table; the higher the number the more intense the use. For example, single family dwellings are a LUC #1, multifamily dwellings are a LUC #2, office and light retail uses are LUC #3, motor vehicle dependent retail/service light industrial uses are LUC #4, and heavy industrial uses are a LUC #5. The above list is only a general guide: to determine the exact LUC for each individual use you must use the number listed in the Land Use Code Chart on page A15 of this manual.

Q: THERE ARE EXISTING OVERHEAD UTILITY LINES ALONG THE FRONT PROPERTY LINE WHERE I AM INSTALLING A STREET PLANTING YARD. DO I STILL NEED TO PLANT TREES IN THE STREET YARD?

The City is aware of the potential conflicts between canopy trees and overhead utility lines and offers two options to eliminate these conflicts. First, it may be possible to shift the plant material away from the overhead utility lines and onto the site so they won't grow into the utility lines. The second option is a provision in the Development Ordinance that permits the Technical Review Committee to allow the installation of smaller understory trees when they determine that there is a major conflict with overhead utility lines. See page A2 for trees that can be planted under power lines.

Q: I HAVE PLANS TO ENLARGE MY BUSINESS IN THE FUTURE BY CONSTRUCTING A 2,000 SQUARE FOOT ADDITION TO THE BUILDING AND AN ADDITIONAL 2,000 SQUARE FOOT PARKING LOT. AM I GOING TO BE REQUIRED TO PROVIDE ANY PLANTING YARDS?

Yes, the Development Ordinance requires the installation of planting yards for all expansions to buildings and parking areas that exceed 3,000 square feet. However, the planting yards are only required for the expansion of the building and the parking. It is important to note that as of June 30, 1992, expansions are cumulative. If, for the first time, you were to expand your business only 2,000 square feet, you would be exempt. If you were, at a later date, to expand another 2,000 square feet, you would not be exempt, because the cumulative expansion is over 3,000 square feet. NOTE: If the property is zoned Central Business (CB), planting yards are not required.

Q: WHAT IS A CRITICAL ROOT ZONE?

The critical root zone includes all the area within a radius equal to one foot for every one inch diameter of the tree trunk (as measured at breast height). The radius is measured outward from the root flare at ground level. NOTE: This is not the same as drip line.

Q: I AM IN THE PROCESS OF PREPARING A SITE PLAN TO CONSTRUCT AN OFFICE BUILDING ON A SMALL LOT (70 FEET WIDE) THAT WAS CREATED MORE THAN 20 YEARS AGO. THERE ARE EXISTING SINGLE FAMILY DWELLINGS ON THE ABUTTING PROPERTY TO THE LEFT AND THE RIGHT OF THE LOT. USING THE PLANTING YARD CHART, I WOULD BE REQUIRED TO INSTALL 30 FOOT WIDE TYPE "B" PLANTING YARDS ON BOTH SIDES OF MY PROPERTY. WOULD THE LANDSCAPE REGULATIONS REALLY ONLY LEAVE ME A 10 FOOT WIDE STRIP IN THE MIDDLE OF THE LOT TO BUILD ON?

No. On lots that were created prior to July 1, 1992, and contain less than 55,000 square feet of land, no development is required to place the required landscaping on greater than 15% of the site. In cases like this, contact the Landscape Planner as early in the plan preparation process as possible. Discuss the options available to provide the most effective buffers for the abutting uses while using at least the required amount of land for vegetation.

Q: IN THE PROCESS OF PREPARING A SITE PLAN FOR A PROJECT THAT IS REQUIRED TO INSTALL PLANTING YARDS; IS A LANDSCAPE PLAN, WHICH DEPICTS THE LOCATION, NAME AND SIZE OF EVERY PLANT TO BE INSTALLED IN THE PLANTING YARDS, REQUIRED BEFORE THE SITE PLAN IS APPROVED FOR A BUILDING PERMIT?

No. The Development Ordinance allows the submission of a "conceptual landscape plan" for review and approval with the site plan. The formal landscape plan or "planting plan" must be submitted to the Planning Department for review and approval within 90 days after the issuance of a building permit or prior to the inspection for a Certificate of Occupancy, whichever occurs first.

Q: DO I NEED TO DO A TREE SURVEY?

If the site is heavily wooded and large areas are to be protected, individual trees do not need to be surveyed.

If the site is heavily wooded, but only the required planting yards are to be saved, survey all trees that are 4 inches or greater in diameter at breast height that are to be saved.

If the site is a park-like setting with individual trees located throughout the site, survey all trees 4 inches or greater in diameter at breast height, located in areas where they will be saved.

PURPOSE AND AUTHORITY

30-1-3.11 PLANTING YARD PURPOSES:

The planting yard regulations, adopted and prescribed in this Ordinance, are found by the City Council to be necessary and appropriate to:

- (A) Create a better quality of life for the community by encouraging preservation of existing trees and vegetation;
- (B) Provide visual buffering and enhance beautification;
- (C) Establish appropriate separation between land uses;
- (D) Provide the separation necessary to permit certain land uses to coexist harmoniously which might not do otherwise;
- (E) Safeguard and enhance property values and protect public and private investment;
- (F) Enhance the community's competitive position in economic development and tourism by improving views, particularly along streets.

30-1-3.18 TREE PRESERVATION PURPOSES:

The Tree Preservation regulations, adopted and prescribed in this ordinance, are found by the city council to be necessary and appropriate to:

- (A) Assure the appearance of Greensboro contributes ecologically and aesthetically to the growth and economic prosperity of the city.
- (B) Assure the integrity of the urban forest is preserved and maintained during and after the development process.
- (C) Provide a flexible, realistic, effective ordinance that is viewed as an asset to the community.

PERMITS AND PROCEDURES

30-3-3.6 TREE DISTURBANCE PERMIT

A tree Disturbance permit is an official authorization which shall be issued by the city prior to any land disturbing activities, including the cutting of live trees four (4) inches DBH or greater on sites not being accompanied by a development plan, except as stated in 30-5-4.1(A) (Exemptions).

30-3-2.5 TREE DISTURBANCE PERMIT EXEMPTIONS

Tree Disturbance Permits are not required for any of the following land disturbing activities:

- (A) Existing or proposed single family detached dwellings on residentially zoned lots or two-family dwellings on their own lots;
- (B) Multifamily developments containing eight (8) or fewer dwelling units on a single zone (building) lot;
- (C) Properties within or surrounded by the Central Business (CB) District;
- (D) Property lines abutting utility easements in excess of sixty (60) feet in width and all railroad rights-of-way;
- (E) Property lines abutting dedicated street right-of-way, which has remained unopened for a period of at least fifteen (15) years;
- (F) Tree removal on three thousand (3,000) square feet or less, after the City Urban Forester or Enforcement Officer has determined that such removal is not associated with a forthcoming development proposal and will not be inconsistent with any plan previously approved by the City or County;
- (G) Property covered by an active forestry management plan written by a North Carolina Registered Forester, provided documentation has been furnished to the City Urban Forester.

30-3-4.1 ORDER OF ISSUANCE

- (C) Tree Disturbance Permits: Tree disturbance permits shall be issued in advance or simultaneous to other permits and approvals including watershed development plans and grading permits.

30-3-5.3 TREE DISTURBANCE PERMIT EXPIRATION.

- (A) Expiration: If the work authorized by a Tree Disturbance Permit has not been completed within (1) year from the date of issuance, the permit shall become null and void unless renewed pursuant to section 30-3-5.3(B).
- (B) Renewal: The Tree Disturbance Permit may be renewed for an additional one hundred eighty (180) days by making a written request to the enforcement officer justifying the need for the permit renewal. No fee will be required for the renewal of the Tree Disturbance Permit.

ADVISORY COMMISSION ON TREES

30-9-13 ADVISORY COMMISSION ON TREES (ACT)

30-9-13.1 AUTHORITY.

An Advisory Commission on Trees (ACT) is hereby established pursuant to NCGS 160A-174.

30-9-13.2 MEMBERSHIP.

- (A) Number of Members: The ACT shall be composed of nine (9) members who shall be appointed by the City Council for terms to expire as of August 15.
- (B) Qualification for Membership: Members shall be residents of the City.
- (C) Composition: Members shall be composed of one (1) certified arborist, one (1) landscape architect or landscape designer, one (1) horticulturist or botanist, two (2) members of the builder/contractor/developer community, one (1) civil engineer, two (2) active members of a recognized environmental group, and one (1) individual who has demonstrated an interest in conservation and natural resources.

30-9-13.3 QUORUM.

Five (5) members of the Advisory Commission on Trees shall constitute a quorum. The concurrence of at least a majority of those members present will be required before any recommendation or action is made on any matter considered.

30-9-13.4 POWERS AND DUTIES.

The Advisory Commission on Trees shall have the following powers and duties:

- (A) To provide professional expertise for developing program goals and policy;
- (B) To evaluate and monitor current regulations for effectiveness, and recommend appropriate changes regarding the Tree Preservation Ordinance to the City Council;
- (C) To conduct educational programs with respect to tree preservation within its jurisdiction;
- (D) To review and provide recommendations for the long term tree management and maintenance plan for the City;
- (E) To gather information from the public, development and business communities with respect to the Tree Preservation Ordinance;
- (F) To review appeals, orders, requirements, decisions, determinations, or interpretations made by an administrative official charged with enforcing the Tree Preservation Ordinance;
- (G) To make recommendations to the BOA with reference to variances with relation to the provisions of the Tree Preservation Ordinance;
- (H) Approve minor variations to the Tree Preservation Ordinance that provide equal or better compliance.

DEFINITIONS

ANSI STANDARDS: American National Standards Institute (ANSI) is a private, non-profit organization (501(c)3) that administers and coordinates the U.S. voluntary standardization and conformity assessment system. This includes tree care operations for trees, shrubs and other woody plant maintenance. www.ansi.org

ADVISORY COMMISSION ON TREES (ACT): A board of nine members made up of members of the builder/developer and environmental community and appointed by City Council. Their responsibilities include reviewing appeals of the Tree Preservation Ordinance and helping to direct the urban forestry program.

ALTERNATE METHODS OF COMPLIANCE: Alternate landscaping plans, plant materials, planting methods, or reforestation may be used where unreasonable or impractical situations would result from application of the landscaping and tree preservation requirements. Alternate plans may be approved provided that the quality, effectiveness, durability and performance are equivalent to that required by the Landscaping and Tree Preservation requirements.

BOARD OF ADJUSTMENT: A board of seven members appointed by the City Council. Their responsibilities include hearing and deciding appeals and reviewing any zoning order made by an administrative official, to hear and decide requests for any special exception and to hear and decide requests for variances from the zoning provisions of the Development Ordinance.

BUFFER: See Planting Yards.

BUILDING SETBACK: The line at which construction of a building is to occur on a lot. A building setback line runs parallel to the front property line and is established to create a consistent building façade line on a street.

CALIPER: American Association of Nurserymen standard for trunk measurement of nursery stock. Caliper of the trunk shall be taken six inches above the ground for up to and including four-inch caliper size, and 12 inches above the ground for larger sizes.

CERTIFICATE OF COMPLIANCE: An official document signed by the Inspections Director, or his designee, stating that a building or structure complies with the provisions of the NC Building Code and of the Unified Development Ordinance.

CERTIFIED ARBORIST: Certified Arborist is a title given by the International Society of Arboriculture to experienced professionals who have passed an extensive examination covering all aspects of tree care. A Certified Arborist is a specialist in the care of individual trees. Certified Arborists are knowledgeable about the needs of trees, and are trained and equipped to provide proper care.

CIRCUMFERENCE: The external, circular measurement of the tree trunk as measured in inches at 4 inches above the ground (often used in the nursery industry).

CRITICAL ROOT ZONE: The critical root zone includes all the area within a radius equal to one foot for every one inch diameter of the tree trunk (as measured at breast height). The radius is measured outward from the root flare at ground level. NOTE: This is not the same as drip line.

CROWN CANOPY: The cover formed by the top branches of trees.

DBH (DIAMETER AT BREAST HEIGHT): A standard measure of tree size, and is a tree trunk diameter measured in inches at a height of 4 ½ feet above the ground. If a tree splits into multiple trunks below 4 ½ feet, then the trunk is measured at its most narrow point beneath the split.

DRIP LINE: A vertical line extending from the outermost portion of a tree's canopy to the ground.

ENFORCEMENT OFFICER: A person who is a sworn officer charged with the enforcement of the Greensboro Development Ordinance.

FEEDER ROOTS: A system of small annual roots growing outward usually from the transport roots. These roots make a complex branching pattern. These roots make up the major function of a tree's root system surface area, and are the primary sites of absorption of water and nutrients. These roots are normally found within the top six inches of soil.

GRADING PERMIT: A permit issued after the approval of a soil erosion and sedimentation control plan. A soil erosion and sedimentation control plan shall be prepared for all land-disturbing activities whenever the proposed activity is on a tract of land of more than one acre. If the tract of land is less than one acre a grading permit is not required, however a Land Disturbance Permit may be required. Contact the Urban Forester at 373-2150. See also land disturbance permit.

GROUND COVER: A species of plant which is normally below one foot in height.

LAND DISTURBANCE: The use of the land by any person or persons in residential, industrial, educational, institutional, or commercial development, highway or road construction or maintenance, that results in a change in the natural cover or topography that may cause or contribute to sedimentation.

NATIVE: Refers to a plant species whose geographic range during pre-colonial times included the Piedmont of North Carolina.

PLANTING YARD:

A YARD: A high-density screen intended to substantially block visual contact between adjacent uses and create spatial separation. A Type A planting yard reduces lighting and noise, which would otherwise intrude upon adjacent uses.

B YARD: A medium-density screen intended to partially block visual contact between uses and create spatial separation.

C YARD: A low-density screen intended to partially block visual contact between uses and create spatial separation.

D YARD: A peripheral planting strip intended to separate uses, provide vegetation in densely developed areas, and enhance the appearance of individual properties.

PROTECTIVE FENCING: A physical and visual barrier installed around the critical root zone of a tree to prevent damage to the tree and its root system. At a minimum this would include three to four foot tall orange safety fencing.

REFORESTATION: The creation of a diverse biological community dominated by trees and other woody plants containing at least 100 trees per acre with at least 50 of those trees having the potential of attaining a 2 inch or greater diameter measured at 4.5 feet above ground, within 7 years.

ROOT FLARE: The part of the tree trunk near the base of the tree that tapers outward into the ground.

ROOTS: The underground part of the tree that functions as an organ of absorption, food storage and aeration and as a support system.

SCREENING: The use of plant material to visually control or block out objectionable views, define and create outdoor space, provide a sense of privacy, reduce glare and reflection, direct views and control noise and wind.

SEEDLING: An unbranched woody plant, less than 24 inches in height and having a diameter of less than ½ inch caliper measured at 2 inches above the root collar.

SHRUB: A low, usually several-stemmed, woody plant. Per the tree preservation and landscape ordinance, a shrub must be a minimum height of 18 inches at planting and reach a minimum height of 36 inches within 3 years of planting.

DECIDUOUS SHRUB: A low usually several-stemmed, woody plant that has leaves that fall off or shed seasonally at a certain stage of development in the life cycle.

EVERGREEN SHRUB: A low usually several-stemmed, woody plant that has leaves that remain green throughout the entire year.

SIGHT TRIANGLE: An area on either side of street intersections, street corners or vehicular access points which allows for sufficient sight distance to allow drivers approaching simultaneously to see each other in time to prevent a traffic accident. The size of the sight triangle is governed by space, time and traffic volume of the subject intersection.

SOIL COMPACTION: An increase in the dry soil weight per unit volume. Compacted soil causes a decrease in the availability of oxygen in the soil and an increase in toxic gases and physical root damage.

STREAM BUFFER: A natural or vegetated area through which stormwater runoff flows in a diffuse manner so that the runoff does not become channelized and which provides for infiltration of the runoff and filtering out of pollutants.

STREET PLANTING YARD: A planting area parallel to a public street designed to provide continuity of vegetation along the right-of-way and a pleasing view from the road. No more than fifteen percent (15%) of the street planting yard may be used for walkways or signs. Parking, merchandise display, and off-street loading are prohibited in the street planting yard.

TECHNICAL REVIEW COMMITTEE: A committee comprised of City staff, including the Landscape Planner and the Urban Forester, that meets weekly, charged with reviewing site development plans to assure they comply with the Greensboro Development Ordinance.

TRANSPORT ROOTS: The system of tree roots comprised of major woody roots and rope roots.

TREE: A large, woody plant having one or several self supporting stems or trunks and numerous branches that reach a height of at least 20 feet at maturity.

CANOPY TREE: A species of tree which normally grows to a mature height of 40 feet or more. Canopy trees are typically shade producing trees.

UNDERSTORY TREE: A species of tree which normally grows to a mature height of 25 to 40 feet. Understory trees often grow beneath canopy trees.

SPECIMEN TREE: A tree that is a particularly impressive or unusual example of a species due to size, shape, age or any other trait that epitomizes the character of that species.

TREE CONSERVATION AREA: A Tree Conservation Area (TCA) is one or more areas of a site which includes existing trees and their critical root zones. The purpose of the TCA is to encourage the preservation of healthy trees that are four (4) inches or greater in diameter at breast height (DBH).

TREE DISTURBANCE PERMIT: A land disturbance permit is an official authorization given by the Urban Forester which shall be issued by the City prior to any land disturbing activities, including cutting of live trees four (4) inches DBH or greater on sites not accompanied by a development plan, except as stated in 30-5-4.1(A)

(Exemptions). This may be required in addition to a grading permit. Contact the Urban Forester at 373-2150. See also grading permit.

TREE PROTECTION MEASURES: Physical and visual barriers used to prevent damage to trees and their root systems.

TRUNK: The main stem of a tree apart from limbs and roots.

UNIFIED DEVELOPMENT ORDINANCE (UDO): A document that contains all of the land development regulations for the City of Greensboro, including all zoning, subdivision and environmental regulations.

VINE: A species of plant which has a spreading pattern of growth.

WHIP: An unbranched woody plant greater than 24 inches in height and having a diameter of less than 1 inch caliper measured at 2 inches above the root collar.

Ordinance

30-5-4 LANDSCAPING AND TREE PRESERVATION REQUIREMENTS

30-5-4.1 Applicability^I

- (A) Exemptions: The requirements of Section 30-5-4 shall not apply to the uses and activities listed below. Any applicable requirements of Sections 30-7-1 (Water Supply Watershed Districts), 30-7-2 (General Watershed Areas), 30-7-3 (Watershed Critical Areas), and 30-7-4 (Soil Erosion and Sedimentation Control) still apply.^{II}
- 1) Existing or proposed single family detached dwellings on residentially zoned lots or two-family dwellings on their own lots;
 - 2) Multifamily developments containing eight (8) or fewer dwelling units on a single zone (building) lot;
 - 3) Properties within or surrounded by the Central Business (CB) District;
 - 4) Property lines abutting utility easements in excess of sixty (60) feet in width and all railroad rights-of-way;
 - 5) Property lines abutting dedicated street right-of-way, which has remained unopened for a period of at least fifteen (15) years;
 - 6) Tree removal on three thousand (3,000) square feet or less, after the City Urban Forester or Enforcement Officer has determined that such removal is not associated with a forthcoming development proposal and will not be inconsistent with any plan previously approved by the City or County;
 - 7) Property covered by an active forestry management plan written by a North Carolina Registered Forester, provided documentation has been furnished to the City Urban Forester.

^I APPLICABILITY OF REQUIREMENTS

Compliance Required or Not Required

The Landscaping and Tree Preservation Requirements apply to commercial, retail, industrial and multi-family site development. It also applies to public entities and owners of public property, such as schools and churches.

^{II} EXEMPTIONS

The tree protection and landscaping requirements do not apply to:

- Single family or duplex residences.
- Multifamily developments with 8 buildings or less on a single parcel of land.
- Properties in the downtown area zoned Central Business (CB).
- Property lines abutting railroad rights-of-way.
- Utility easements in excess of 60 feet (example: Duke Power transmission lines).
- Property lines next to a dedicated street right-of-way that has remained unopened for at least 15 years.
- Tree removal on 3,000 square feet or less.
- Property covered by an active Forest Management Plan written by a North Carolina Registered forester.

(B) Application: These requirements shall apply to the following:^{III}

- 1) New Principal Building or Use: Principal buildings or open uses of land constructed, reconstructed, or established after June 30, 1992.
- 2) Changes in Use: Changes in use, which result in an increase of two (2) or more in the Land Use Classification number. The requirements of this section shall be applicable to the entire zone lot.
- 3) Expansions: All expansions of buildings, parking areas, or open uses of land, except the first three thousand (3,000) square feet of expansions to buildings, parking areas, or open uses of land existing on June 30, 1992. The requirements of this section shall be applicable only to the expansion.
- 4) Tree Disturbance: All other activities for which a Tree Disturbance Permit is required by Section 30-5-4.2(A) (Tree Disturbance Permit).

30-5-4.2 Tree Conservation Plan Procedures

(A) Tree Disturbance Permit: A Tree Disturbance Permit is an official authorization which shall be issued by the City simultaneous to the issuance of a grading permit and prior to any tree disturbing activities. Tree disturbing activities include cutting and/or damage to the Critical Root Zone of live trees four (4) inches DBH or greater on sites not accompanied by a development plan, except as stated in 30-5-4.1(A) (Exemptions).^{IV}

- 1) Requirements for a Tree Disturbance Permit:
 - a) Identify the Tree Conservation Area as specified in 30-5-4.4(A). (See page 17.)
 - b) The Tree Conservation Area as required for a site based on lot size, as determined in 30-5-4.4(A) must be met.
 - c) Submit a Tree Protection Plan as specified in 30-5-4.2(A) 2) (Tree Protection Plan Approval). (See pages 40 and 43.)

^{III} **Tree Protection and landscaping shall apply to:**

- New or reconstructed buildings or open uses of land. (i.e. athletic fields, commercial parking lot).
- Changes in how the land is used.
- Expansions of buildings, parking areas, or open uses of land with a total or cumulative total of more than 3,000 square feet as of July 1, 1992. The requirements shall only apply to the expansion.
- Land disturbance, including the cutting of trees.

Note: Other types of land development or redevelopment may require compliance with the tree ordinance or landscaping requirements because the requirement was specifically noted on a conditional rezoning plan that had been approved by City Council.

^{IV} **TREE DISTURBANCE PERMIT**

Unless a site plan has already been approved by the Technical Review Committee, and the property is not exempt from the tree preservation ordinance, a tree disturbance permit is required to remove trees from a piece of property. A tree disturbance permit will allow property owners to remove trees from their property; however, they must leave a buffer of trees and vegetation around the property perimeter.

A grading permit may also be necessary. For more information on a grading permit, contact the Erosion Control Division of the Engineering and Inspections Department. A tree disturbance permit is still required even if a grading permit is not needed.

WARNING: Do not cut trees prior to contacting the Planning Department at

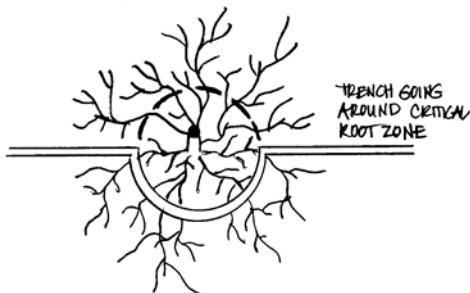
(336) 373-2150 unless on an existing single-family residential lot.

- 2) Tree Protection Plan Approval: Approval of a tree protection plan is required for all projects, except those listed in subsection 30-5-4.1(A) (Exemptions), and shall be submitted along with all other necessary drawings to the Technical Review Committee. Tree protection items shall be included on all grading plans, erosion control plans and Tree Disturbance Permit plans.
- 3) Drawings shall identify the following items:
 - a) Boundaries of the required Tree Conservation Area;
 - b) Required planting yards;
 - c) Protected trees within the Tree Conservation Area including tree size and type; ^V
 - d) Critical Root Zone of each proposed protected tree or group of trees;
 - e) Limits of clearing;
 - f) Grading;
 - g) Trenching; ^{VI}
 - h) Required tree protection measures including required fencing and signage;
 - i) Overhead and underground utilities and easements;
 - j) Areas of reforestation, if any;
 - k) Stream buffers, if any;
- 4) The following required notes shall be indicated on tree preservation plans, erosion control plans, grading plans and Tree Disturbance Permit plans in capital letters:

^V **TREE SURVEY**

- If the site is heavily wooded and large areas are to be protected, trees do not need to be surveyed.
- If the site is heavily wooded but only the required planting yards are to be saved, survey all trees 4 inches or greater DBH that will be saved.
- If site is a park-like setting with individual trees located throughout the site, survey all trees 4 inches or greater DBH located in areas where they will be saved.

^{VI} **TRENCHING**



Trenching around the critical root zone instead of trenching through the critical root zone will sever fewer roots and allow for a greater chance of tree survival.

- a) Contact the City Urban Forester to set up a pre-construction meeting prior to any tree disturbance. (Planning Department: (336) 373-2150)
 - b) All tree protection devices must be installed prior to inspection by the City Urban Forester or Enforcement Officer and prior to any tree disturbance activities. (For Tree Protection Detail, see page A23.)
 - c) Removal or damage of trees in the Tree Conservation Area will be subject to the penalties established in 30-5-4.10 (Penalties) of the Section 30-5-4 Landscaping and Tree Preservation Requirements. (See page 35)
- 5) These plans shall be reviewed by the City Urban Forester or Enforcement Officer for conformance with applicable provisions of this Section, 30-5-4 Landscaping and Tree Preservation Requirements and for tree and vegetation viability. The plans will either be approved or returned for revisions. Reasons for return shall be noted on the proposed plan.
 - 6) All tree protection measures shall be installed prior any tree disturbing activities except those necessary to install the tree protection and or temporary soil erosion control measures. The developer shall contact the Urban Forester to conduct an inspection of all tree protection devices prior to any tree disturbing activities except as noted above.
 - 7) The City Urban Forester or Enforcement Officer will conduct follow-up site inspections for enforcement of the tree protection requirements of the Development Ordinance of the City of Greensboro.
 - a) The developer shall contact the Urban Forester to conduct an intermediate inspection of the Tree Preservation requirements after the site grading has been completed but prior to the installation of the landscaping.
 - b) The developer shall contact the Urban Forester to conduct a final inspection of the Tree Preservation requirements prior to being issued a Certificate of Occupancy.

(B) Provisions for Preservation of Existing Trees:

- 1) General: Any existing tree or group of trees which stands within or near a required planting area and meets or exceeds the standards of Section 30-5-4 Landscaping and Tree Preservation Requirements may be used to satisfy the tree requirements of the planting area. The protection of tree stands, rather than individual trees, is strongly encouraged.
- 2) Protection of Existing Trees: To receive credit, trees must be protected from direct and indirect root damage and trunk and crown disturbance. The following standards shall apply:
 - a) The Tree Conservation Area shall include land within the Critical Root Zone as provided in this section.

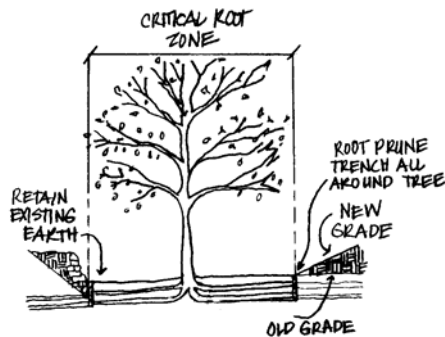
- b) Construction site activities such as parking, material storage, dirt stockpiling, concrete washout and other similar activities shall not be permitted within the Tree Conservation Area.^{VII}
- c) Changes to the grade of soil that compromise the Tree Conservation Area by increasing or decreasing soil moisture content shall be avoided.^{VIII}
- d) A reasonable effort should be made to have utility line trenches and similar uses avoid the Tree Conservation Area. Due to certain site conditions, where disturbance within the Tree Conservation Area is unavoidable, underground tunneling or directional boring of utilities is preferred. Trenching shall be used only as the last alternative and root pruning equipment specifically designed for that purpose shall be used.^{IX}



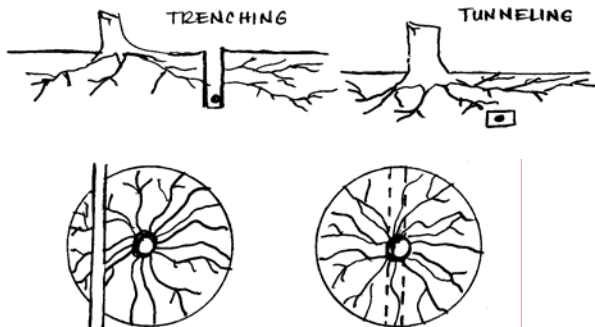
VII NOT PERMITTED

Parking and the stockpiling of materials and dirt will inhibit tree health and potentially require the replacement of the tree when it dies.

VIII CHANGING THE SOIL GRADE



IX TRENCHING VS. TUNNELING



- e) Protective fencing shall be installed around the Tree Conservation Area prior to any tree disturbing activities. Such fences shall be at least four (4) feet high and shall consist of orange polyethylene safety fencing. Fencing shall remain in place until construction is complete and other landscaping has been installed, and the City Urban Forester or Enforcement Officer has approved its removal.
- f) The Tree Conservation Area should be designated as such with "Tree Conservation Area" signs posted visibly on the outside of the fenced-in area. Signs may not be posted on the trees.

(C) Evaluation of Specimen Trees and Stand of Trees: Existing specimen trees and stands of trees must meet the following conditions to be considered for the Tree Conservation Area:

- 1) A life expectancy of greater than ten (10) years;
- 2) A relatively sound and solid trunk with no extensive decay;
- 3) No major insect or pathological problems.

(D) Dead or Unhealthy Trees^x:

- 1) No credit will be allowed for any dead tree, any tree in poor health, or any tree subjected to grade alterations.
- 2) Except for storm damage, the death of any tree used for preservation credit within five (5) years of site development shall require the landowner to plant new trees equal to the number of credited trees. After five (5) years any tree(s) that were used for preservation credit that die shall require a replacement canopy tree(s) be replanted in accordance with 30-5-4.9 (B) 1) (Canopy Tree Size, see page 30).
- 3) The City Urban Forester may require trees left standing outside of the Tree Conservation Area to be removed if improperly protected or determined to be hazardous.

30-5-4.3 Tree Conservation

(A) Tree Conservation Area: A Tree Conservation Area (TCA) is one or more areas of a site which includes existing trees and their Critical Root Zones. The purpose of the TCA is to encourage

A trench that is installed adjacent to a trunk will cut off approximately 40% of the tree roots and also make the tree more likely to blow over in high winds because the roots are not present to hold it in the ground on the trench side. Any trenches should be dug outside of the drip line of trees. If you must install pipes, the best route is to tunnel under the tree trunk. In this fashion, you will not sever many roots and the tree will have a greater chance of survival.

^x **UNHEALTHY TREES**

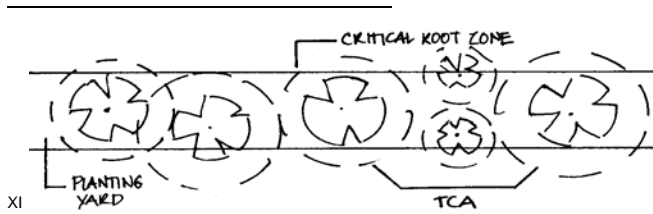
An unhealthy tree will not survive the damage of construction and therefore is not worth saving.

the preservation of healthy trees that are four (4) inches or greater in diameter at breast height (DBH).^{XI}

- (B) **Critical Root Zone:** To preserve existing trees within the designated TCA, the Critical Root Zone of the trees shall be preserved.^{XII} The Critical Root Zone will include a radius around the tree equal to one (1) foot for every one (1) inch of DBH from the tree trunk as measured at the ground level from the root flare. It is recommended to save the entire Critical Root Zone of each preserved tree. If the entire Critical Root Zone cannot be preserved, tree roots must be cut prior to grading of the site. Should the Critical Root Zone have to be disturbed, the disturbed area shall extend no closer to the protected tree's trunk than the distance specified below:

Diameter of Tree (DBH)	Minimum Distance
4-7.9 inches	1 foot for every 1 inch in diameter
8-22.9 inches	8 feet
23-29.9 inches	9 feet
30+ inches	10 feet

- (C) Disturbance within the Critical Root Zone will be allowed only on one side of the tree(s) to be saved and only with prior approval by the City Urban Forester.^{XIII}



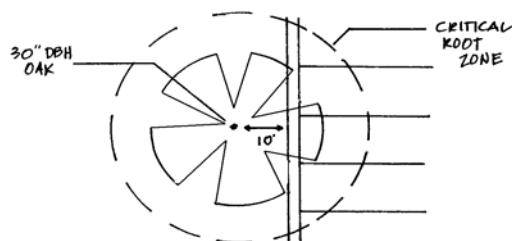
The tree conservation area includes the trees and the critical root zone.

^{XII} TREE ROOTS

Trees, their root system and soil structure all play a vital role in tree health.

- Over 90% of a tree's roots are within the top 24 inches of soil, radiating out from the tree just under the soil surface.
- The root system extends out at least two to three times the height of the tree. (Note: The above example does not show the full extent of a tree's root system.)
- Roots must be protected from damage and compaction during demolition, grading and construction.

^{XIII} ENCROACHING ON CRITICAL ROOT ZONE



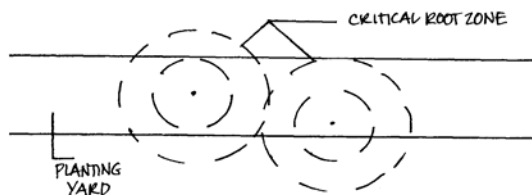
WITH PRIOR APPROVAL OF THE CITY URBAN FORESTER

30-5-4.4 Tree Conservation Area Determination

- (A) Extent of TCA: TCA shall be provided in accordance with the chart below. If trees of four (4) inches or greater DBH exist within or partially within these areas, such trees must be saved to the extent possible. The area will be designated TCA and shall not be disturbed except as allowed herein.^{XIV}

Size of Parcel	TCA Required to Include
0-55,000 sq. ft.	1% of lot area, and be located within the required planting yard.
55,000-5 acres	All trees four (4) inches or greater DBH which are located within the required planting yards.
5.01-10 acres	All trees four (4) inches or greater DBH which are located within the required planting yard or within fifteen (15) feet of the side and rear property lines, whichever is greater.
Greater than 10 acres	All trees four (4) inches or greater DBH which are located within the required planting yard or within twenty-five (25) feet of the side and rear property lines, whichever is greater.

- (B) No development shall be required to have the TCA exceed fifteen percent (15%) of the total site.^{XV}
- (C) If there are trees that meet the TCA requirements on other areas of the site, the landowner may request that the required TCA be designated around such trees instead of the usual locations.
- (D) Other Provisions: The requirements of this section may be modified to permit the establishment of the TCA (see 30-5-4.5 Tree Conservation Flexibility Standards).
- (E) Smaller Trees: Trees less than four (4) inches DBH within the TCA may be preserved at the landowner's option and counted toward planting yard requirements as provided herein.^{XVI}
- (F) TCA Selection: In selecting which existing tree stands are to be designated as TCA, the landowner shall give due consideration to building, parking lot, driveway, street and



XIV

A tree partially within the Planting Yard must be included. This also means the critical root zone of that tree.

^{XV} **TCA REQUIREMENT**

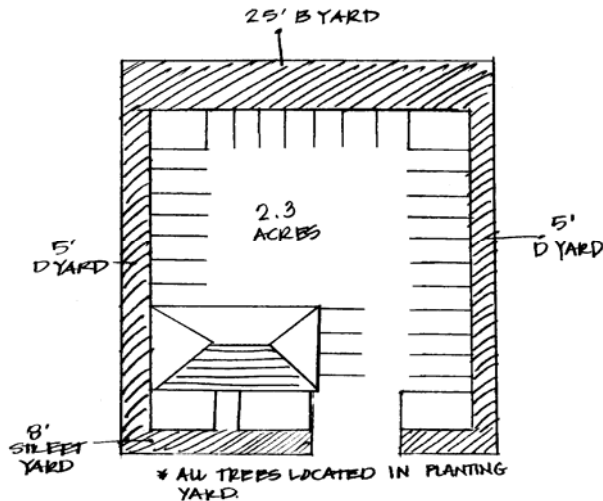
The City has the authority to require trees to be saved in the planting yards. However, the City does not have the authority to require trees to be saved in the interior of the property.

^{XVI} **SAVING SMALLER TREES**

Example: If you have an area on your property that contains small trees less than 4 inches in diameter; it can be counted as a Tree Conservation Area. No new trees would be required, in that portion of the planting yard.

utility location as they relate to the practicality of preservation and shall use the following tree preservation priority list:^{XVII}

TREE CONSERVATION EXAMPLE



1. Determine the size of your property and using the chart on page 18, determine the amount of TCA you are required to have.
2. In this example the size of the property is 2.3 acres, therefore they are required to save all trees located in the planting yards.
3. Determine the size of your planting yards (see page 29 for an example).
4. If you do not wish to save all the trees located in the planting yards, you may save trees in another area on the property on an equal square foot basis.
5. Identify the species and diameter of those trees you will be saving. Determine the critical root zones of those trees and include this information on the grading and erosion control sheet of your development plan.
6. Label your tree conservation areas.
 - 1) Existing stands of mature hardwoods as highest priority, then
 - 2) Existing stands of younger hardwoods, then

^{XVII} SELECTING TREES FOR PRESERVATION

Existing trees can add character, beauty and dollar value to a development. Some trees, however, are less likely to survive the construction process than others.

It is important to carefully consider the trees you would like to save when beginning a tree preservation project. Larger trees are generally less adaptable and have larger critical root zones than smaller trees which, without special care during construction, are more likely to be damaged.

A HEALTHY TREE STANDING ALONE PRIOR TO CONSTRUCTION OR A GROUP OF EXISTING TREES WITH THE CRITICAL ROOT ZONE PROTECTED FROM DAMAGE IS THE BEST CHOICE FOR LONG TERM TREE SURVIVAL FOLLOWING CONSTRUCTION.

- 3) Existing specimen trees (as determined by the City Urban Forester or Enforcement Officer), then
 - 4) Existing stands of hardwoods and pine mix, and lastly
 - 5) Existing stands of pine trees. Preservation of single pine trees is not encouraged.
- (G) If it is necessary to pick among two or more stands of trees within a category listed above, the following priority list shall be used:
- 1) Type A planting yards, as a first priority, then
 - 2) Type B planting yards, then
 - 3) Type C planting yards, then
 - 4) Type D planting yards, and lastly
 - 5) Street planting yards.
- (H) The following are permitted in the required TCA provided there is no disturbance to the critical root zone of the preserved trees.
- 1) Landscaping features including planting boxes, sculpture, arbors, trellises and birdbaths.
 - 2) Outdoor furniture, ornamental entry columns and gates, flagpoles, lampposts, address posts, mailboxes, public utility wires and poles, fences, retaining walls, or similar structures.
 - 3) Cornices, steps, canopies, overhanging eaves and gutters, window sills, bay windows or similar architectural features, chimneys and fireplaces, fire escapes, fire balconies, and fire towers which project not more than two and one-half (2 1/2) feet into any required TCA.
 - 4) Handicap ramps except for porches and landings.
 - 5) Steps not connected to any above-grade structure.
- (I) Tree Removal Inside the Critical Root Zone (TCA): Trees less than four (4) inches DBH not being preserved, undergrowth and plant material in poor condition may be removed from the TCA. No roots shall be removed from the TCA. Stumps may be removed only by grinding. All requests for tree removal within the TCA must have prior approval by the City Urban Forester or Enforcement Officer pursuant to the provisions of this chapter. However, in an emergency situation due to storm damage; to alleviate an imminent hazard to the health, safety and welfare

of the citizens; or to repair property damage, prior approval for tree removal in previously approved designated areas is not required.^{xviii}

- (J) All removal of said material shall be done or supervised by an experienced urban forester, landscape architect or certified arborist, who will certify that the tree and root removal or pruning was done in accordance with standard arboricultural practices. (See definition of certified arborist on page 8.)
- (K) Any tree within the TCA including the Critical Root Zone, which the landowner chooses to remove or that must be removed due to poor health or impractical means of preservation shall be removed in a manner that is in accordance with standard arboricultural practice so as to cause as little disturbance or harm to those trees intended to be saved as practical. (You can get information on the latest Standard Arboricultural Practices at www.ansi.org.)
- (L) Relationship of the TCA and Planting Yards^{xix}:

- 1) All trees of appropriate size and type preserved in the TCA that are within the planting yard shall be credited toward meeting all or part of the planting yard requirements, except for the street planting yard where there shall be at least one canopy tree, existing or planted, within every fifty (50) linear feet of street planting yard, and the minimum eight (8) foot width shall not be reduced. Credits are to be given for required trees in the same planting yard as the tree(s) preserved in accordance with the chart below.

Diameter of Tree (DBH)	Number of Trees Credited
4-7.9 inches	1 tree
8-22.9 inches	2 trees
23-29.9 inches	3 trees
30+ inches	4 trees

- 2) Any area in a TCA shall count as a portion of a planting yard or parking lot planting area. (See page 22 for additional information on parking lot areas containing trees.)



^{xviii} **TREE REMOVAL INSIDE THE CRITICAL ROOT ZONE**

Small trees and undergrowth within a Critical Root Zone must be removed by hand.

^{xix} **TREE PRESERVATION VS. PLANTING YARD**

Example 1: If you have a continuous area of trees that were saved in the planting yard, additional plantings may not be required. An instance where you may be required to install additional plantings would be to plant shrubs along parking adjacent to existing canopy trees.

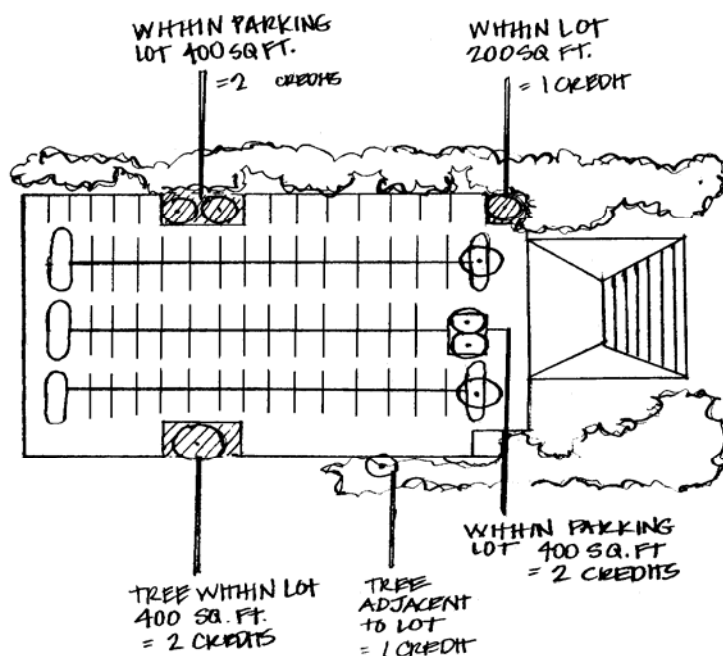
Example 2: If you have only saved a couple of trees in the planting yard and there remains a large area that is unvegetated, additional plantings will be required.

- 3) No new landscaping is required within a TCA unless it is contiguous to existing single family development and it is needed to shield abutting parking lots, access drives, loading areas and outside storage.

30-5-4.5 Tree Conservation Flexibility Standards

- (A) Stream Buffer Credits: Properties falling under the Stormwater Management Control Requirements which are required to maintain an undisturbed stream buffer may use some or all the buffer to satisfy the required TCA if that undisturbed stream buffer contains trees that are a minimum of four (4) inches in diameter at breast height (DBH).
- (B) Land Dedication: Land that is dedicated to the City that is contiguous to the property being developed may be used towards the tree preservation requirement, if the dedicated land contains trees that are a minimum of four (4) inches in diameter at breast height (DBH).
- (C) Reforestation Credits: In situations where TCA requirements cannot be met based on site conditions and when approved by the City Urban Forester, reforestation efforts on the property can be used to satisfy up to fifty percent (50%) of the required TCA. In unique circumstances, the property owner may reduce the tree conservation requirement up to 50%. They must, however, reforest the remainder of square footage at the rate of 1 tree per 200 square feet. The trees must be 1¾ inch caliper hardwood shade trees.
- (D) Tree Preservation Adjacent to or Within the Parking Lot and Parking Lot Plantings^{xx}: For new, expanded, or rebuilt parking lots where trees are being preserved adjacent to the parking lot in order to meet the parking lot planting requirements, trees preserved in a TCA and within eight (8) feet of the parking lot may be used to satisfy up to fifty percent (50%) of the required number of parking lot trees. TCA that is “notched into” corners or edges of a parking lot is deemed to be

^{xx} TREE PRESERVATION ADJACENT OR WITHIN PARKING LOTS



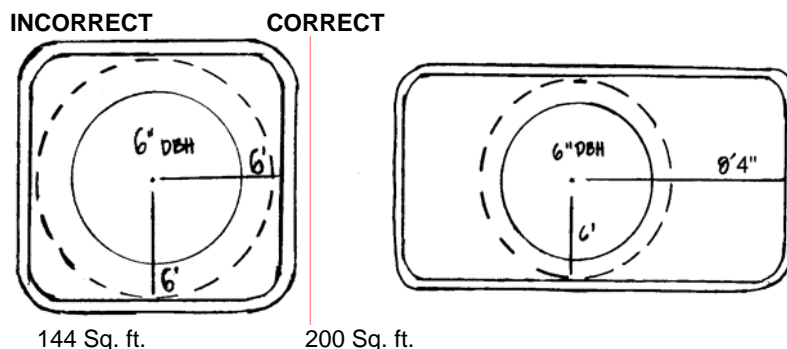
within the parking lot, not adjacent to it. Trees in the TCA counted toward planting yard requirements may not count for required parking lot trees. Extra trees in such locations do count. It is the landowner's option to save trees within the parking lot. In order to do so, the Critical Root Zone must be preserved. Credits for preserving parking lot trees are determined by the Critical Root Zone preserved for the tree being saved (see 30-5-4.3(B) Critical Root Zone). One tree for every two hundred (200) square feet of critical root zone preserved may be used to satisfy up to fifty percent (50%) of the required number of parking lot trees.^{XXI}

- (E) Reduction in Parking Requirements: To allow an existing development to retrofit parking to conform to the landscaping regulations, or to allow an existing or new development to preserve trees within or adjacent to a parking lot, the number of required off-street parking spaces may be reduced by the City Urban Forester or Enforcement Officer by up to ten percent (10%).
- (F) Waivers: The City Urban Forester or Enforcement Officer shall have the authority to allow reduced planting yards or to waive the planting yard requirements to allow for a greater TCA in another area or make other exceptions, which meet the spirit and intent of this section. Additionally, if the City Urban Forester or Enforcement Officer concludes that due to existing unusual or unique site characteristics, preserving some or all required trees in the TCA(s) would create an undue or unreasonable hardship, then the protection of some or all of required trees in the TCA(s) may be waived.^{XXII}

30-5-4.6 Landscape Plan Procedures

- (A) Landscaping Plan Approval: An applicant must receive approval of a landscape plan from the Enforcement Officer, except in accordance with Section 30-3-11.4(B)2) in which case a landscape plan must be submitted within ninety (90) days after issuance of the building permit. (See the landscape plan review and planting process, pages 38 & 40.)
- (B) Installation of Plant Materials (see page 34):

^{XXI} If the critical root zone of a tree saved within the parking lot is equivalent to less than 200 square feet, the parking lot island must be increased to 200 square feet.



^{XXII} REDUCTION OF TREE PRESERVATION REQUIREMENTS

The following are some examples where tree preservation requirements may be reduced. Generally, reforestation is substituted for tree preservation.

- Redevelopment or infill developments
- Trees in poor health.
- Conflicts with other City ordinances or state regulations.
- Utility installation.

- 1) Installation of plant material shall occur prior to the issuance of a Certificate of Compliance (see definition on page 8).
- 2) If at the time of a request for a Certificate of Compliance, the required planting areas are not complete and it can be determined that:
 - a) plant materials are unavailable,
 - b) completion of the planting areas would jeopardize the health of the plant materials, or
 - c) weather conditions prohibit completion of the planting areas, then the installation of plant materials may be deferred by the Enforcement Officer. The landowner shall submit a copy of a signed contract for installation of the required planting areas and may be required to post a surety equal to the amount of the contract. In no instance shall the surety be for a period greater than one hundred and eighty (180) days. The Enforcement Officer may issue a Temporary Certificate of Compliance but shall not issue a Certificate of Compliance until the planting areas have been completed and approved.^{xxiii}

30-5-4.7 Planting Areas:

(A) Required Planting Areas: The following areas are required to be landscaped:

- 1) Planting yards^{xxiv};
- 2) Parking lots (excluding vehicle loading, storage, and display areas);
- 3) Areas with slopes steeper than 3:1 (see page 25).

(B) Planting Yard Descriptions:

- 1) Street Planting Yard: A planting area parallel to a public street designed to provide continuity of vegetation along the right-of-way and a pleasing view from the road. No more than fifteen percent (15%) of the street planting yard may be used for walkways or signs. Parking, merchandise display, and off-street loading are prohibited in the street planting yard.^{xxv}

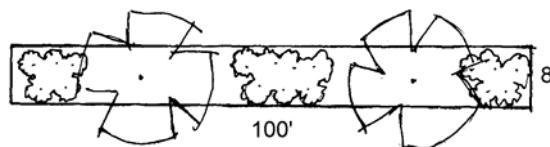
^{xxiii} TEMPORARY CERTIFICATE OF OCCUPANCY

Temporary certificates of occupancy are granted in the following circumstances:

- Plant materials are unavailable.
- Installation would jeopardize the health of the plant material.
- Weather conditions such as drought or extreme heat.

^{xxiv} PLANTING YARDS

Planting yards are designed to beautify the property as well as screen one property from the next. A narrow D planting yard is used along properties with a similar use (i.e., a video store next to a wallpaper store) and a wide A planting yard is used along properties with a very different use (i.e., a gas station next to a single family residence).

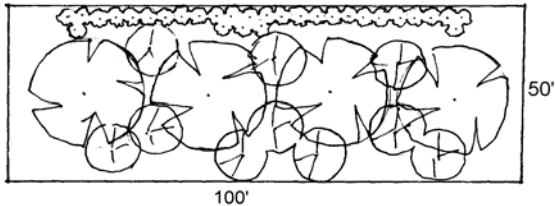


^{xxv} STREET PLANTING YARD

2 canopy trees | 17 shrubs

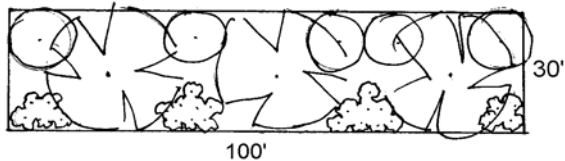
- 2) Type A Planting Yard: A high-density screen intended to block substantially visual contact between adjacent uses and create spatial separation. A Type A planting yard reduces lighting and noise, which would otherwise intrude upon adjacent uses.^{XXVI}
 - 3) Type B Planting Yard: A medium density screen intended to partially block visual contact between uses and create spatial separation.^{XXVII}
 - 4) Type C Planting Yard: A low-density screen intended to partially block visual contact between uses and create spatial separation.^{XXVIII}
 - 5) Type D Planting Yard: A peripheral planting strip intended to separate uses, provide vegetation in densely developed areas, and enhance the appearance of individual properties.^{XXIX}
-

^{XXVI} TYPE A PLANTING YARD



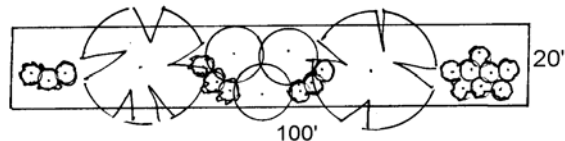
4 canopy trees | 10 understory trees | 33 shrubs

^{XXVII} TYPE B PLANTING YARD



3 canopy trees | 5 understory trees | 25 shrubs

^{XXVIII} TYPE C PLANTING YARD



2 canopy trees | 3 understory trees | 17 shrubs

^{XXIX} TYPE D PLANTING YARD



2 understory trees | 17 shrubs

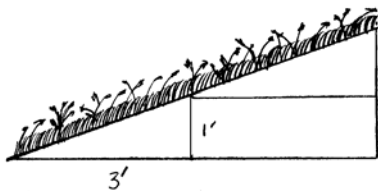
- 6) Parking Lot Plantings: Planting areas within and adjacent to parking areas designed to shade and improve the attractiveness of large areas of pavement. (See page 22 for explanation of “within” and “adjacent”.)

(C) Reforestation of slopes steeper than 3:1 ^{xxx}.

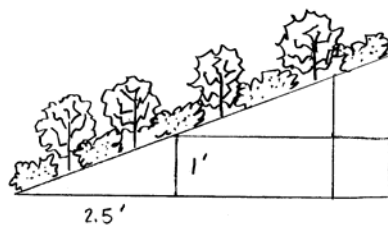
- 1) Areas having slopes steeper than 3:1 must be reforested to provide tree cover over the entire area. The following standards apply:
 - a) All plans for reforestation shall include a minimum of one (1) tree per four hundred (400) square feet of surface area and may be made up of a mixture of deciduous hardwood and evergreen trees. The trees shall be a minimum of two (2) inch caliper (water wise species) or three (3) inch caliper (non-water wise species) at planting. All plans for reforestation shall be approved by the Urban Forester or the Enforcement Officer.
 - b) The trunk of any required tree shall be no closer than ten (10) feet from any other existing tree.

30-5-4.8 Planting Yard Determination

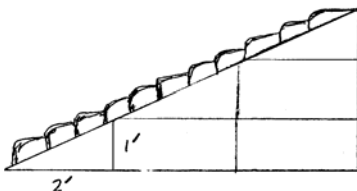
^{xxx} REFORESTATION OF SLOPES



A 3:1 slope or flatter can be easily mowed.



A slope that is steeper than 3:1 but flatter than 2:1 must be reforested.



A slope that is steeper than 2:1 according to the Soil Erosion and Sedimentation Control Ordinance section 30-7-4.3 (B), must be protected by a structure, such as a retaining wall.

- (A) To determine the planting yards required by this Section 30-5-4 Landscaping and Tree Preservation Requirements, the following steps shall be taken:
- 1) Identify the classification of the proposed or expanded land use and of each existing adjacent land use(s) by using Table 30-4-5-1 (Permitted Use Schedule). A proposed land use is considered existing on an adjacent property when a building permit is issued. If a zone lot contains uses with different land use classifications, select the higher numbered classification. If the development qualifies as an integrated multiple use development (refer to definition in Section 30-2-2.7 (General)), the entire development shall be treated as a single zone lot for planting yard and TCA purposes and its land use classification (LUC) shall be that classification applicable to the highest number of uses in the development. (For example, an integrated shopping center containing seven (7) establishments with LUCs of "3" and three (3) establishments with LUCs of "4" shall be classified as a "3".)
 - 2) Use the Planting Yard Chart, Table 30-5-4-1, to determine the appropriate letter designation for each planting yard.
 - 3) Match the letter designation obtained from the Planting Yard Chart with the Planting Yard and Parking Lot Rate Chart, Table 30-5-4-2, to determine the types and numbers of shrubs and trees required.
- (B) Calculation of street planting yards: Street planting yard rate and width calculations shall exclude access drives.
- (C) Planting Yard Flexibility Standards:
- 1) Walls, a minimum of five (5) feet in height constructed of masonry, stone or pressure treated lumber, or an opaque fence, a minimum of five (5) feet in height, may be used to reduce the widths of the planting yards by ten (10) feet providing such reductions do not disturb the critical root zone of existing trees.
 - 2) Understory trees shall be substituted for canopy trees at the rate of two (2) understory trees for every canopy tree planted within fifteen (15) feet of an overhead power line. (SEE APPENDIX A2 ILLUSTRATIONS.)^{XXXI}
 - 3) Canopy trees may be substituted for shrubs at the rate of one (1) canopy tree for eight (8) shrubs and understory trees may be substituted for shrubs at the rate of one (1) understory trees for five (5) shrubs if approved by the City Urban Forester or Enforcement Officer.
 - 4) On lots of record, Prior to July 1, 1992 that are less than fifty-five thousand (55,000) sq. ft. in area, no development shall be required to place required landscaping on greater than fifteen percent (15%) of the site.

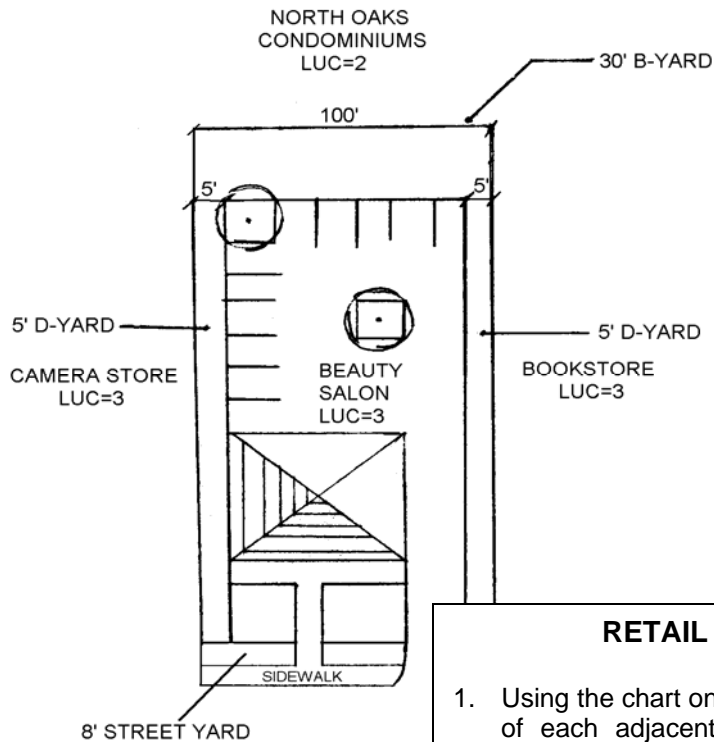
^{XXXI} **OVERHEAD UTILITY LINES**

Avoid planting canopy shade trees directly under power lines. If possible, shift the plant material away from the overhead power lines or there is a provision that permits the installation of smaller understory trees when there is a major conflict with overhead utility lines. (See page A2 for trees to plant near or under power lines.)

TABLE 30-5-4-1 PLANTING YARD CHART							
EXISTING ADJACENT USE(S)							
Proposed Use	Land Use Classification	Least Intensive	→	→	→	Most Intensive	
		1	2	3	4	5	Undeveloped
Least Intensive	1	*	*	*	*	*	*
↓	2	C	D	D	D	D	D
↓	3	B	B	D	D	D	D
↓	4	A	A	C	D	D	D
Most Intensive	5	A	A	B	C	D	D
*No Planting Yard Requirement (See LUC Chart on page A15)							

TABLE 30-5-4-2 PLANTING YARD AND PARKING LOT RATE CHART						
PLANTING RATES						
Type	Average Width (ft.)	Minimum Width (ft.)	Maximum Width (ft.)	Canopy Tree Rate	Understory Tree Rate	Shrubs Rate
Street Yard	8	8	25	2/100 lf		17/100 lf
Type A Yard	50	40	75	4/100 lf (a)	10/100 lf (b)	33/100 lf (c)
Type B Yard	30	25	50	3/100 lf	5/100 lf	25/100 lf
Type C Yard	20	15	40	2/100 lf	3/100 lf	17/100 lf
Type D Yard	5	5	10		2/100 lf	18/100 lf
Parking Lot	NA	NA	NA	1/12 parking spaces	NA	NA
<i>a) Twenty-five (25) feet on center.</i> <i>b) Ten (10) feet on center.</i> <i>c) Three (3) feet on center.</i>						

RETAIL DEVELOPMENT EXAMPLE



RETAIL DEVELOPMENT EXAMPLE

- Using the chart on page A15, look up the land use code (LUC) of each adjacent use and the use of the new proposed development.

<i>Beauty Salon</i>	<i>LUC=3</i>
<i>Camera Store</i>	<i>LUC=3</i>
<i>Book Store</i>	<i>LUC=3</i>
<i>Condominiums (Multi-family)</i>	<i>LUC=2</i>

- Using the planting yard chart (top chart) on page 28, match up the LUC of the Proposed use next to the adjacent uses.

Proposed Use	Existing Adjacent Use					
	LUC	1	2	3	4	5
1	*	*	*	*	*	*
2	C	D	D	D	D	D
3	B	B	D	D	D	D
4	A	A	C	D	D	D
5	A	A	B	C	D	D

- Once the planting yard is determined, look up the planting yard width and plant requirements on the planting rate chart (bottom chart) on page 28.

A D-yard can be a minimum of 5 feet wide and requires 2 understory trees/100 linear feet and 18 shrubs/100 linear feet.

- To determine the number of trees required in the parking lot, count the total number of spaces and divide by 12. This will be the number of trees that are required within the parking lot. Round up to the nearest whole number.

30-5-4.9 Planting Yard Design and Maintenance Standards

- (A) **Plant Species:** Species used in required planting yards and parking lots shall be of a locally adapted nature. Refer to the recommended plant species list, which includes water wise species, in Appendix 6 (Landscaping). Other species may be approved by the City Urban Forester or Enforcement Officer. ^{xxxii} (See approved plant list on page A5.)
- (B) **Plant Size:** The size of the required plant species is dependant on whether it is drought tolerant or not drought tolerant. Specific plant sizes are listed below:
- 1) **Canopy Tree Size:** Water wise canopy trees, using required planting techniques must be a minimum of two (2) inches in caliper, measured six (6) inches above grade, when planted (See Section 30-5-4.9 (N)). When mature, a canopy tree should be forty (40) feet high and have a minimum crown width of thirty (30) feet. Other canopy trees must be a minimum of three (3) inch caliper, measured six (6) inches above grade, when planted.
 - 2) **Understory Tree Size:** Water wise understory trees must be a minimum of one (1) inch in caliper, measured six (6) inches above grade, when planted. (See section 30-5-4.9 (N)). When mature, an understory tree should be twenty-five (25) to forty (40) feet high. Other understory trees must be a minimum of two (2) inches in caliper measured six (6) inches above grade at the time of installation.
 - 3) **Shrub Size and Type:** All approved water wise shrubs, using required planting techniques planted parallel to the edge of parking lots, access drives, loading and unloading areas and outside storage shall be evergreen and installed at a minimum size of eighteen (18) inches, spread or height, and reach a minimum height of thirty-six (36) inches and a minimum spread of thirty (30) inches. (See section 30-5-4.9 (N)). Required water wise shrubs in other locations, outside of the areas listed above may be evergreen or deciduous, shall be three (3) gallon in size as per ANSI standards at the time of installation. ^{xxxiii}
- (C) **Parking Lot Planting Areas:** For new parking lots, in order to meet the parking lot planting requirements, required canopy tree areas shall be located within the parking lots and adjacent to parking spaces as planting areas between rows of parking spaces, inside medians, at the end of parking bays, or in tree islands. The landowner may provide required planters using one or more of the planter sizes below. Each parking space must be entirely within the designated

^{xxxii} **DIVERSITY:** It is preferred that landscape plans use more than 2 species of plants to help promote plant diversity. Diverse landscapes are less susceptible to insect, disease and cultural problems.

^{xxxiii} **SHRUB SIZE**



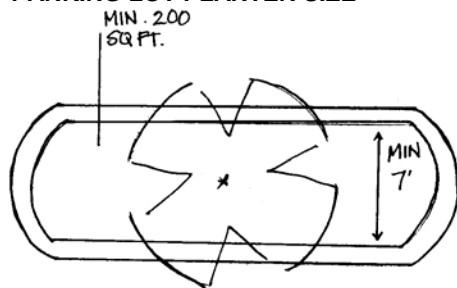
Shrubs will help soften the look of parking lots by partly screening the lower parts of cars.

distance of a parking lot planter as specified below.^{xxxiv} Each parking lot planting area shall have a minimum inside dimension of seven (7) feet and shall have a minimum area of two hundred (200) square feet. Grouping of parking lot trees within the same island is strongly encouraged, even if this would decrease the number of islands otherwise built within the parking lot.^{xxxv} The City Urban Forester or Enforcement Officer may approve a smaller island based on the mature height of that tree species. (See Appendix 6 (Landscaping))

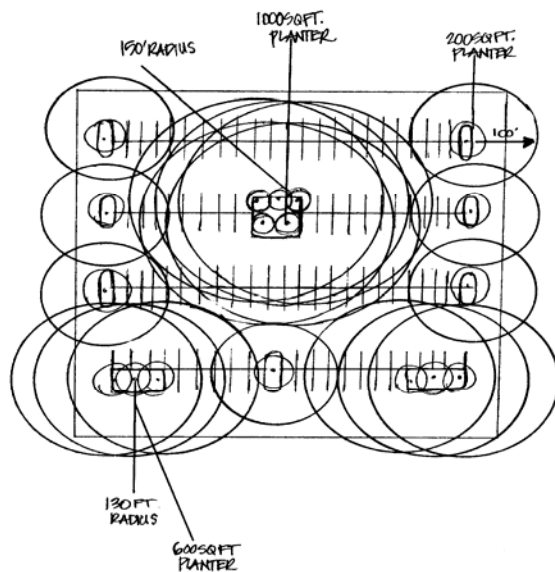
Size of Parking lot Planter	Number of trees in planter	Distance
200-499 sq. ft.	1	100ft.
500-899 sq. ft.	3	130ft.
900+ sq. ft.	5	150ft.

- (D) Grouping: Shrubs and trees may be grouped or clustered in the required planting yards, except for the perimeter landscaping adjacent to parking lots, outside storage, access drives and loading and unloading areas. The remainder of the materials shall be distributed throughout the

^{xxxiv} **PARKING LOT PLANTER SIZE**



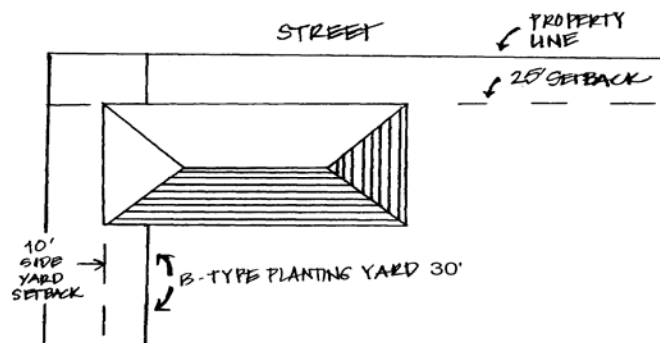
^{xxxv} **PARKING LOT ARRANGEMENT EXAMPLES**



This site has 216 parking spaces. The requirement is 1 tree for every 12 parking spaces according to the Planting Yard and Parking Lot Rate Chart on page 28, therefore this site needs a total of 18 trees. This example shows the different parking lot planter sizes in relation to the parking space coverage they provide.

planting yard. There shall be at least one row of evergreen shrubs or evergreen understory trees in all Type A planting yards.

- (E) Berm Size: Any berm shall have a minimum height of three (3) feet, a minimum crown width of three (3) feet and a side slope no greater than 3:1 (3 horizontal to 1 vertical).
- (F) Wall Planters: Wall planters shall be constructed of masonry, stone, or pressure treated lumber stamped for ground contact (AWPB LP-22 1980 or equivalent). The minimum height of the wall planter shall be thirty (30) inches. The minimum height of shrubs in the wall planter shall be six (6) inches. The effective planting area of the wall planter shall be four (4) feet in width. If the wall planter is to contain trees, the effective planting width shall be seven (7) feet.
- (G) Encroachments Permitted in Required Planting Yards and the TCA:
- 1) The following are permitted in required planting yards provided the landscaping requirements are met and there is no interference with any sight area:
 - 2) Landscaping features, including but not limited to, ornamental pools, planting boxes, sculpture, arbors, trellises, and birdbaths.
 - 3) Pet shelters, at-grade patios, play equipment, outdoor furniture, ornamental entry columns and gates, flagpoles, lampposts, address posts, HVAC equipment, mailboxes, outdoor fireplaces, public utility wires and poles, pumps, wells, fences, retaining walls, or similar structures.
 - 4) Cornices, steps, canopies, overhanging eaves and gutters, window sills, bay windows or similar architectural features, chimneys and fireplaces, fire escapes, fire balconies, and fire towers may project not more than two and one-half (2 1/2) feet into any required planting yard, but in no case shall be closer than three (3) feet to any property line.
 - 5) Handicap ramps except for porches and landings.
 - 6) Steps not connected to any above-grade structure.
- (H) Setback Less Than Planting Yard: If the required building setback is less than the required planting yard width or TCA, the building setback shall control, reducing the required planting yard width only alongside the building. The planting rate of the required planting yard shall still apply.^{xxxvi}



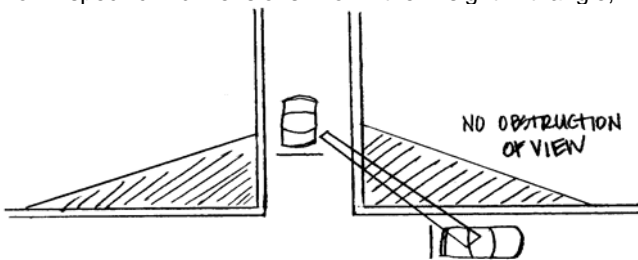
^{xxxvi} **SETBACK LESS THAN PLANTING YARD**

Building setback requirements override planting yard requirements but only along the building.

- (I) Location of Planting Material Outside Shade of Building: Where a building is located less than ten (10) feet from a property line, and the planting yard would be heavily shaded by buildings on both sides of the property line, the required trees and shrubs may be planted outside the shaded area to improve survivability.
- (J) Obstructions:^{XXXVII} Landscaping shall not obstruct the view of motorists using any street, driveway, or parking aisle.
- (K) Location: Required trees and shrubs shall not be installed in street rights-of-way. Required trees and shrubs may be placed in water quality conservation easements. Required trees and shrubs may be planted in electric utility easements below overhead lines and in drainage maintenance and utility easements by approval of the Technical Review Committee.^{XXXVIII}
- (L) Plant Protection: Whenever planting areas are adjacent to parking lots or drives, the planting areas shall be protected from damage by vehicles, lubricants, or fuels.^{XXXIX}
- (M) Maintenance: The landowner is responsible for maintaining all required plant materials and planting areas in good health and appearance. Any dead, unhealthy, or missing plants (preserved or planted) shall be replaced with new plant material equal to the number of credited trees planted or preserved, subject to the provisions of 30-5-4.2 (Provisions for Preservation of Existing Trees). This plant material shall be sized according to the requirements of Section 30-5-4.9 (Planting Yard Design and Maintenance Standards), and shall be replanted within one hundred and eighty (180) days with vegetation which conforms to the initial planting rates and standards.
- (N) Water wise Planting Techniques:^{XL} The following soil preparation techniques shall be used for all required landscape areas.

XXXVII SIGHT TRIANGLE

For specific dimensions of the sight triangle, contact the Greensboro Department of Transportation.



XXXVIII EASEMENTS AND R-O-W

The required trees and shrubs shall not be placed in the street rights-of-way. If the City needed to utilize the R-O-W for road widening or utility installation, the plant material would be removed or destroyed. Keeping the plant material out of the R-O-W will keep the integrity of the planting yards intact.



XXXIX

Bollards, curb and gutter and wheel stops will help protect trees from damage by cars.

- 1) Soil preparation for the entire landscape yard includes the addition of organic amendments tilled to a depth of eight (8) to twelve (12) inches.
 - 2) All plantings in the landscape yards shall be mulched, including interior parking lot islands less than five hundred (500) square feet to a depth of three (3) to four (4) inches. The mulch shall be free of trash and maintained weed free thereafter.
 - 3) Earthen basins are constructed around the installed plants.
 - 4) Plants, as permitted by this Ordinance, are grouped together where possible.
 - 5) For establishment and survival, plants shall be watered in the first year of planting.
- (O) Irrigation: It is suggested that drip irrigation, which includes drip misters, be used for required landscaping planting beds during the required establishment period. After establishment, supplemental watering can be reduced and used on an as needed basis. Traditional spray irrigation is prohibited except for turf areas.
- (P) Pruning: All required trees shall be allowed to reach their mature size and shall be maintained at their mature size. Trimming and pruning shall be done in strict accordance with the American National Standards Institute (ANSI) standards. Topping is not an acceptable pruning practice. Topping is the reduction of a tree's size using heading cuts that shorten limbs or branches back to a predetermined crown limit. The City Urban Forester may require the removal and replacement of any tree(s) that have been topped or excessively trimmed.

30-5-4.10 Penalties

- (A) Violations that have not resulted in the removal or damage to trees or encroachment into the tree conservation area:
- (1) The Urban Forester or Enforcement Officer shall issue a Notice of Violation for all violations that have not resulted in the removal or damage to trees or encroachment into the tree conservation area. The Notice of Violation shall be administered in accordance with the provisions of Section 30-8-3(Enforcement Procedures) of the Development Ordinance of the City of Greensboro.
 - (2) Civil Penalties issued pursuant to a Notice of Violation shall not exceed a maximum civil penalty of \$5,000.00.

^{XL} WHAT IS WATER WISE?

The principles associated with the concept of water wise planting have been long advocated. They include: appropriate planning and design, soil improvement, efficient irrigation, practical turf areas, appropriate plant selection, use of mulches, and maintenance.

The benefits of water wise landscaping are many. Reduced water consumption is environmentally as well as financially friendly. The water wise landscaping principles such as design, mulching, and efficient irrigation also reduce landscape maintenance. The water wise landscaping principle of appropriate plant selection has the added benefit of reducing fertilizer and pesticide use.

- (3) Failure to comply with the Notice of Violation may result in further legal actions, remedies and penalties as provided by State Law or by Section 30-8-4(Remedies) of the Development Ordinance of the City of Greensboro.
- (B) Violations that have resulted in the removal or damage to trees or encroachment into the tree conservation area:
- (1) The Urban Forester or Enforcement Officer shall issue a Civil Penalty for all violations that have resulted in the removal or damage to trees or encroachment into the tree conservation area. The Civil Penalty shall be administered in accordance with the provisions of Section 30-8-5(Civil Penalties – Assessments and Procedures) of the Development Ordinance of the City of Greensboro except as noted below.
 - (2) Civil Penalties issued under this provision shall not be less than \$500.00 nor exceed a maximum penalty of \$50,000.00 per violation.
 - (3) In addition to any civil penalties issued under this provision the Urban Forester or the Enforcement Officer shall require reforestation of the damaged trees or the tree conservation area as specified in Table 30-5-4-1 or 30-5-4-2 below whichever is most applicable.
 - (4) Penalty Assessments:
 - (a) The penalty for the removal or damage to trees or the encroachment into the tree conservation area shall be assessed as described in Table 30-5-4-1 or 30-5-4-2 below whichever is most applicable;

TABLE 30-5-4-1

DBH OF TREE REMOVED OR DAMAGED	CIVIL PENALTY	REFORESTATION RATE ONE 2" CALIPER MINIMUM (WATER WISE SPECIES) or 3" CALIPER MINIMUM (NON- WATER WISE SPECIES) PER 400 SQ. FT.
4 – 11.9 INCHES	\$800.00	4 CALIPER INCHES
12 – 20.9 INCHES	\$1,600.00	8 CALIPER INCHES
21 – 28.9 INCHES	\$2,400.00	12 CALIPER INCHES
29 – 35.9 INCHES	\$3,200.00	16 CALIPER INCHES
36+ INCHES	\$4,000.00	20 CALIPER INCHES

TABLE 30-5-4-2

\$10,000.00 PER ACRE OR PORTION THEREOF OF REMOVAL OR DAMAGE TO TREES OR ENCROACHMENT INTO THE TREE CONSERVATION AREA
REFORESTATION RATE ONE 2" CALIPER MINIMUM (WATER WISE SPECIES) or 3" CALIPER MINIMUM (NON-WATER WISE SPECIES)) PER 400 SQ. FT.

NOTE TO TABLE 30-5-4-1 and 30-5-4-2: ALL REFORESTATION REQUIREMENTS SHALL BE APPROVED BY THE URBAN FORESTER or ENFORCEMENT OFFICER. THE SPECIES OF TREES SELECTED FOR REFORESTATION SHALL BE APPROPRIATE TO THE SITE CONDITIONS AND BE SELECTED FROM THE APPROVED PLANT LIST LOCATED IN THE APPENDIX. ALL PLANS FOR REFORESTATION SHALL COMPLY WITH THE WATER WISE PLANTING TECHNIQUES DESCRIBED IN SECTION 30-5-4.9(N) OF THE DEVELOPMENT ORDINANCE OF THE CITY OF GREENSBORO.

- (b) The civil penalty for failure to obtain a Tree Disturbance Permit or TRC approval prior to tree disturbing activities shall be \$500.00.
- (c) The civil penalty for failure to install and maintain tree protection devices shall be \$500.00 per incident.
- (d) The civil penalty for failing to obtain a scheduled inspection shall be \$500.00 per incident.

30-5-4.11 Alternate Methods of Compliance

(A) General Provisions:

- 1) Alternate landscaping plans, plant materials, planting methods or reforestation may be used where unreasonable or impractical situations would result from application of landscaping or tree preservation requirements. Such situations may result from streams, natural rock formations, topography, or other physical conditions; or from lot configuration, utility easements, unified development design, or unusual site conditions.
- 2) The Enforcement Officer may approve an alternate plan, which proposes different plant materials or methods provided that quality, effectiveness, durability, and performance are equivalent to that required by this Section 30-5-4 Landscaping and Tree Preservation Requirements. The performance of alternate landscaping plans or tree preservation plans shall be reviewed by the City Urban Forester or Enforcement Officer to determine if the alternate plan meets the intent and purpose of this Section 30-5-4 Landscaping and Tree Preservation Requirements. This determination shall take into account the land use classification of adjacent property, number of plantings, species, arrangement and coverage, location of plantings on the lot, and the level of screening, height, spread, and canopy of the plantings at maturity.

- 3) Decisions of the Enforcement Officer regarding alternate methods of compliance for landscaping may be appealed to the Technical Review Committee as requests for modifications.^{XLII} Decisions of the City Urban Forester regarding alternate methods of compliance for tree preservation and reforestation may be appealed to the Advisory Commission on Trees (ACT).^{XLIII}
- 4) Appeals from a decision of the Advisory Commission on Trees (ACT) with regard to alternate methods of compliance shall be to the Board of Adjustment in the nature of certiorari.^{XLIII}

(B) RESERVED

DISCLAIMER

The intent of this manual is to assist the community in understanding the tree preservation and landscape ordinance, however if misinterpretations in the explanations are made the ordinance text rules.

^{XLII} **LANDSCAPE APPEALS**

Appeals of the landscape requirements may be made to the Technical Review Committee.

Appeals of the Technical Review Committee are made to the Planning Board.

^{XLIII} **TREE PRESERVATION APPEALS**

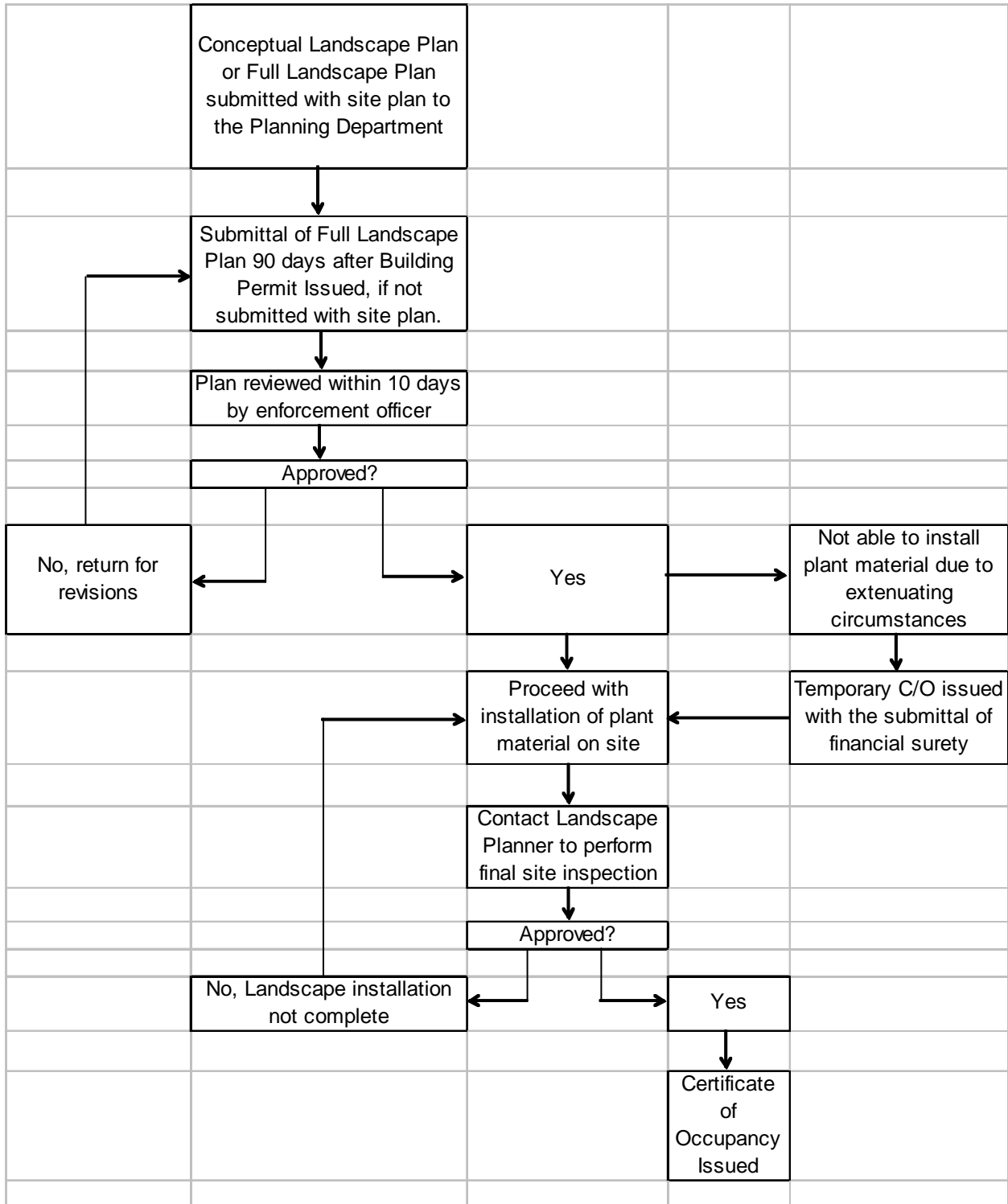
Appeals of the tree preservation requirements may be made to the "Advisory Commission on Trees" 15 days from the day the decision or interpretation is made. If no petition is filed, the decision of the Enforcement Officer is final.

Appeals of the "Advisory Commission on Trees" are made to the Board of Adjustment.

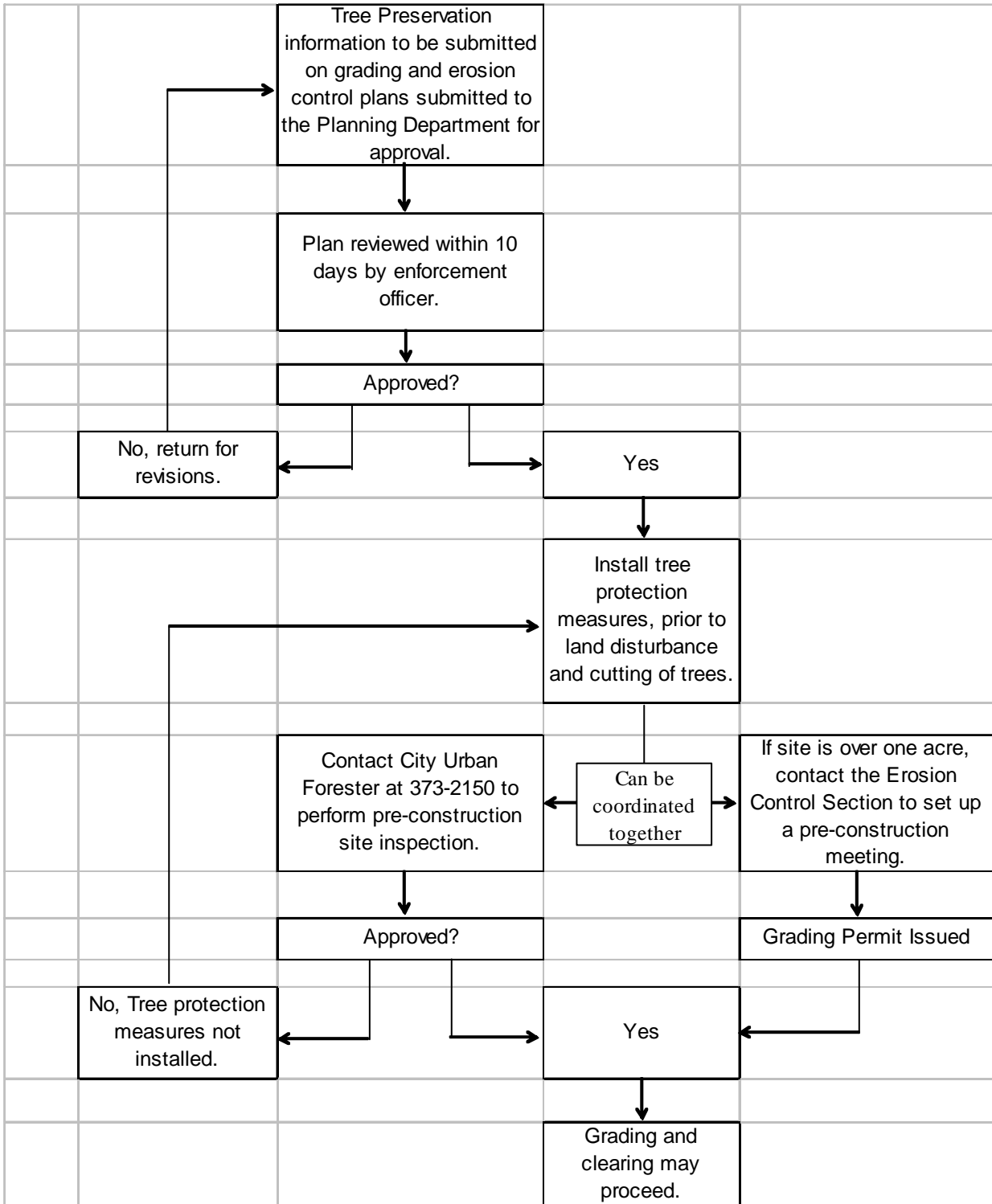
^{XLIII} **NATURE OF CERTIORARI**

The Board of Adjustment can take no additional evidence on the appeal but must make its decision strictly on the basis of the record submitted. All information necessary to affirm or reverse the Advisory Commission on Trees must be contained in the written record.

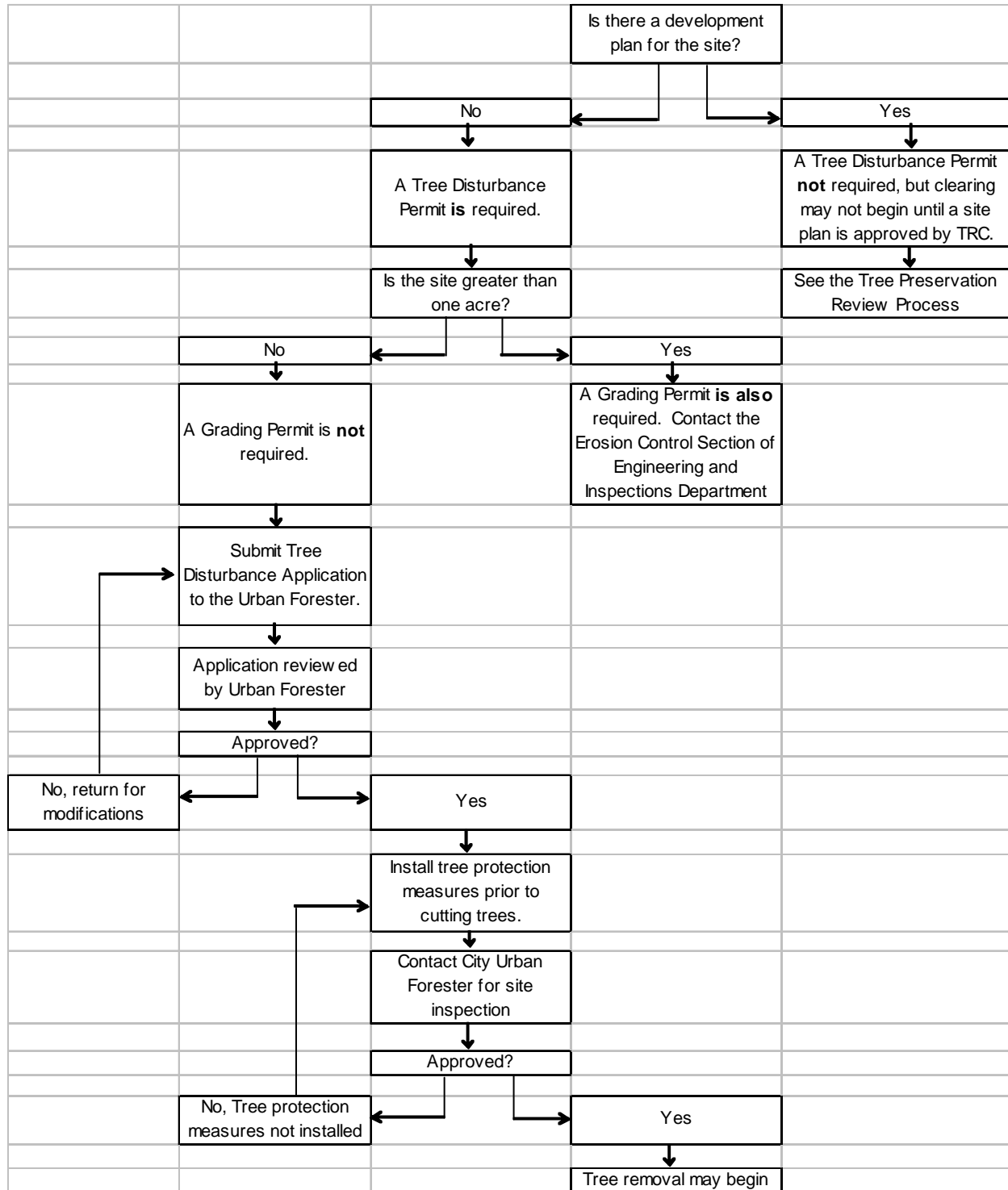
LANDSCAPE PLAN REVIEW PROCESS



TREE PRESERVATION REVIEW PROCESS



TREE DISTURBANCE PERMIT PROCESS



10. Note on Plan:

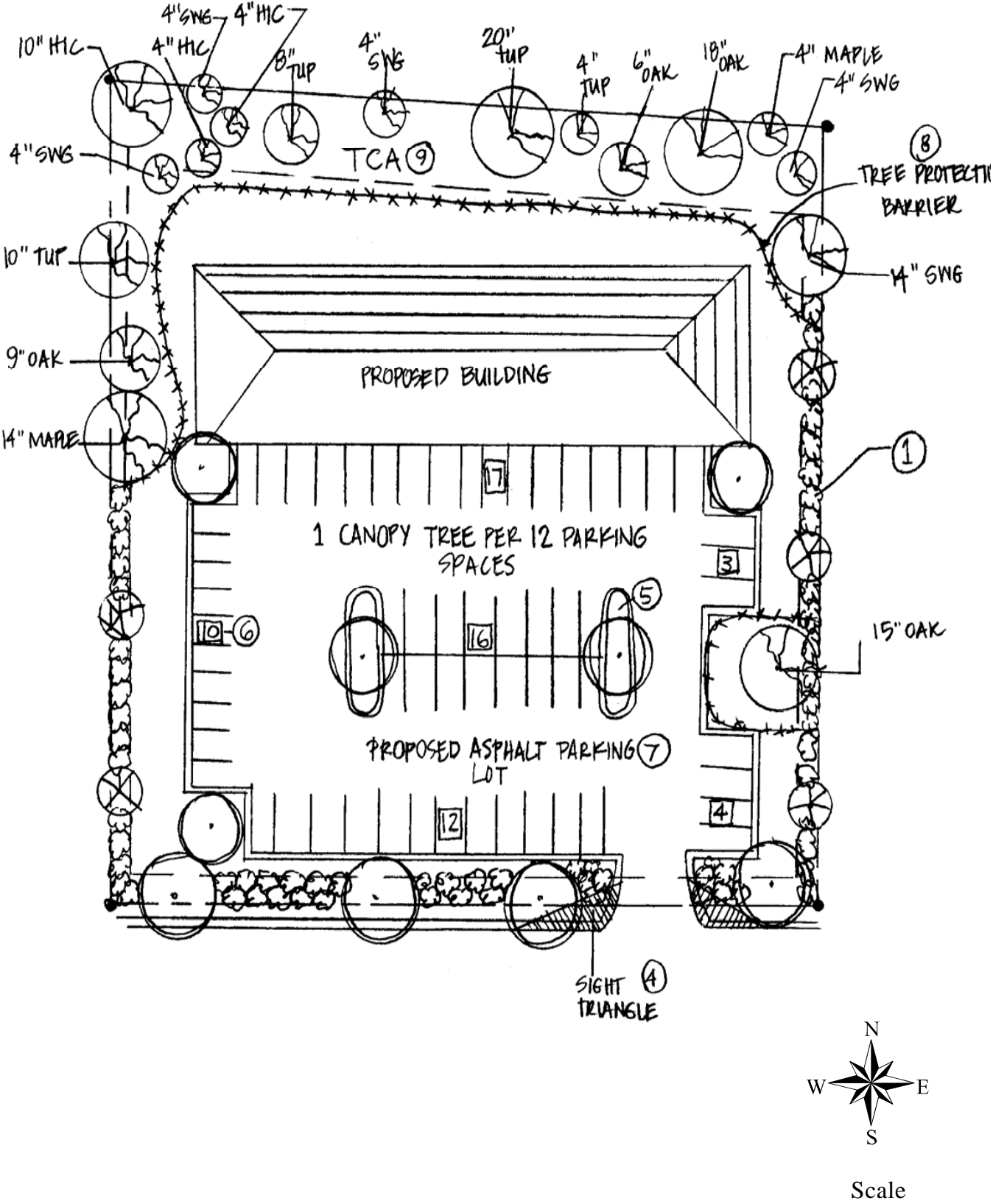
The applicant will contact the Landscape Planner at 373-2918 after the completion of the site grading to arrange for an on-site meeting/inspection to determine the credit for the existing vegetation towards the number of plants in the perimeter buffer yards.

10. Note on Plan:

Water wise Planting Techniques: The following soil preparation techniques shall be used for all required landscape areas.

- 1) Soil preparation for the entire landscape yard includes the addition of organic amendments tilled to a depth of eight (8) to twelve (12) inches.
- 2) All Plantings in the landscape yards shall be mulched including interior parking lot islands under five hundred (500) square feet to a depth of three (3) to four (4) inches and maintained weed free thereafter.
- 3) Earthen basins are constructed around the installed plants.
- 4) Plants, as permitted by this Ordinance, are grouped together where possible.
- 5) For establishment and survival, plants shall be watered in the first year of planting.
- 6) Irrigation: It is suggested that drip irrigation, which includes drip masters, be used for required landscaping planting beds during the required establishment period. After establishment, supplemental watering can be reduced and used on an as needed basis. Traditional spray irrigation is prohibited except for turf areas.

2. PLANT LIST				
Quantity	Symbol	Description	Size	Height
18		Existing trees	NA	NA
9		Shumard Oak	2"	8'
5		Crape myrtle	2"	4'
80		Nellie stevens	3 gallon	18"



LANDSCAPE PLAN
PREPARATION GUIDELINES

- 1. Depict plant locations.
- 2. Provide plant list.
- 3. Indicate the minimum required size for canopy trees, understory trees and shrubs at the time of installation.
- 4. Depict the required sight distance triangles on both sides of the driveway and on both directions at the public street intersection.
- 5. Provide landscape islands in the parking area for the installation of canopy trees.
- 6. Indicate the number of parking spaces in each run.
- 7. Indicate the type of material to be used to pave the required parking spaces and drive isles.
- 8. Locate and describe barriers to protect any vegetation from damage both during and after construction, if any.
- 9. Identify tree conservation areas, if any.
- 10. Provide the notes on plan

NOTE: The requirements shown above are general requirements. On unique or complicated sites, additional information may be required.

LANDSCAPE PLAN

COMMERCIAL SITE
100 NORTH AVENUE
GREENSBORO, NORTH CAROLINA

10. Note on Plan:

This is a conceptual landscape plan.

The applicant must submit a detailed landscape plan (which depicts the plant types and locations) within 90 days from the issuance of the building permit for review by the Planning Department. The landscape plan must be approved by the Planning Department prior to receiving an inspection for the Certificate of Occupancy.

10. Note on Plan:

The applicant will contact the Landscape Planner at 373-2918 after the completion of the site grading to arrange for an on-site meeting/inspection to determine the credit for the existing vegetation towards the number of plants in the perimeter buffer yards.

10. Note on Plan:

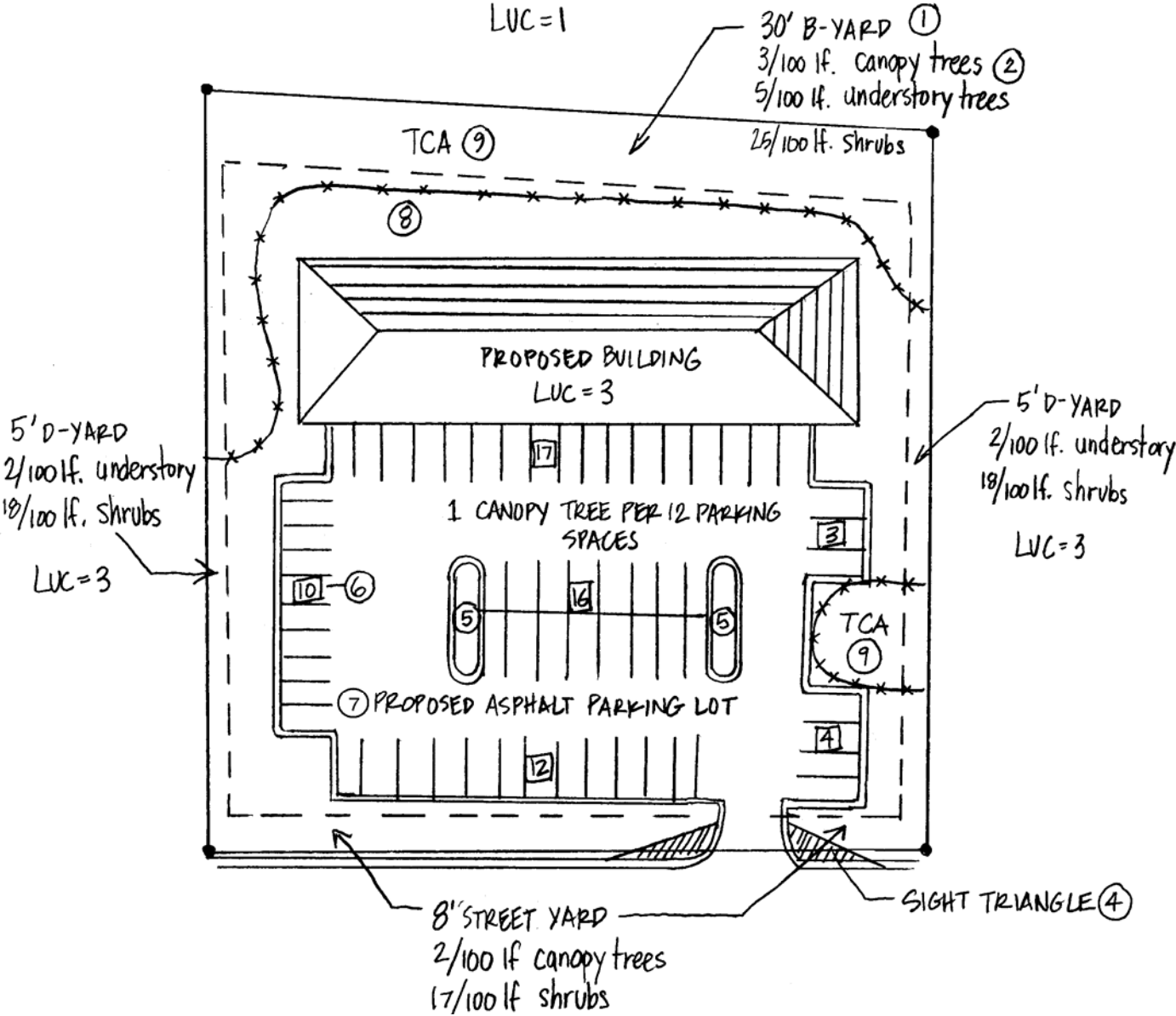
Canopy Tree Size: Water wise canopy trees, using required planting techniques must be a minimum of two (2) inches in caliper, measured six (6) inches above grade, when planted (See Section 30-5-4.4 (N)). When mature, a canopy tree should be forty (40) feet high and have a minimum crown width of thirty (30) feet. Other canopy trees must be a minimum of three (3) inch caliper, measured (6) inches above grade, when planted.

Understory Tree Size: Water wise understory trees must be a minimum of one (1) inch in caliper, measured six (6) inches above grade, when planted. (See section 30-5-4.4 (N)). When mature, an understory tree should be twenty-five (25) to forty (40) feet high. Other understory trees, must be a minimum of two (2) inches in caliper measured six (6) inches above grade at the time of installation.

Shrub Size and Type: All approved water wise shrubs, using required planting techniques planted parallel to the edge of parking lots, access drives, loading and unloading areas and outside storage shall be evergreen and installed at a minimum size of eighteen (18) inches, spread or height, and reach a minimum height of thirty-six (36) inches and a minimum spread of thirty (30) inches. (See section 30-5-4.4 (N)). Required water wise shrubs in other locations, outside of the areas listed above may be evergreen or deciduous, shall be three (3) gallon in size as per ANSI standards at the time of installation.

3. Minimum Plant Sizes

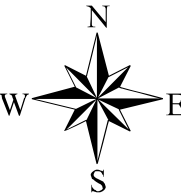
Canopy trees:	2" Caliper
Understory Trees:	1" Caliper
Shrubs:	18" height at time of installation



10. Note on Plan:

Water wise Planting Techniques: The following soil preparation techniques shall be used for all *required landscape areas*.

- 1) Soil preparation for the entire landscape yard includes the addition of organic amendments tilled to a depth of eight (8) to twelve (12) inches.
- 2) All Plantings in the landscape yards shall be mulched including interior parking lot islands under five hundred (500) square feet to a depth of three (3) to four (4) inches and maintained weed free thereafter.
- 3) Earthen basins are constructed around the installed plants.
- 4) Plants, as permitted by this Ordinance, are grouped together where possible.
- 5) For establishment and survival, plants shall be watered in the first year of planting.
- 6) Irrigation: It is suggested that drip irrigation, which includes drip masters, be used for required landscaping planting beds during the required establishment period. After establishment, supplemental watering can be reduced and used on an as needed basis. Traditional spray irrigation is prohibited except for turf areas.



Scale

CONCEPTUAL
LANDSCAPE PLAN
PREPARATION GUIDELINES

11. Depict the boundary and width dimensions of all required planting yards.
12. Indicate the minimum planting rate for all required planting yards.
13. Indicate the minimum required size for canopy trees, understory trees and shrubs at the time of installation.
14. Depict the required sight distance triangles on both sides of the driveway and the sight distance triangles on both directions at the public street intersection.
15. Provide landscape islands in the parking area for the installation of canopy trees.
16. Indicate the number of parking spaces in each run.
17. Indicate the type of material to be used to pave the required parking spaces and drive isles.
18. Locate and describe barriers to protect any vegetation from damage both during and after construction, if any.
19. Identify tree conservation areas, if any.
20. Provide the notes on plan.

NOTE: The requirements shown above are general requirements. On unique or complicated sites, additional information may be required.

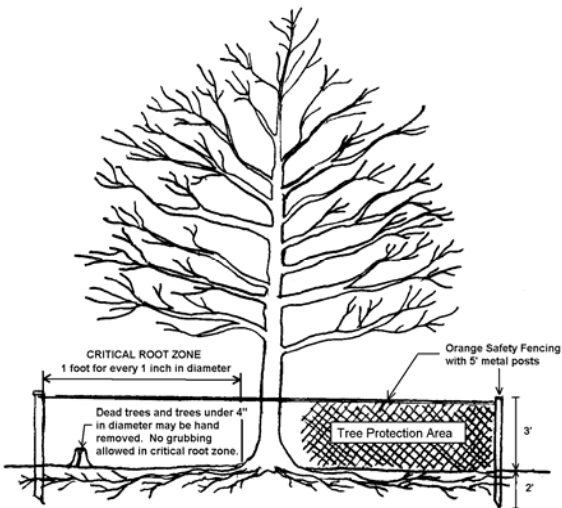
CONCEPTUAL LANDSCAPE PLAN

COMMERCIAL SITE
100 NORTH AVENUE
GREENSBORO, NORTH CAROLINA

8. Tree Preservation Notes:

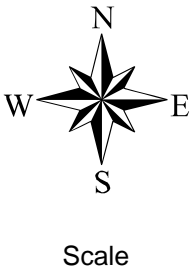
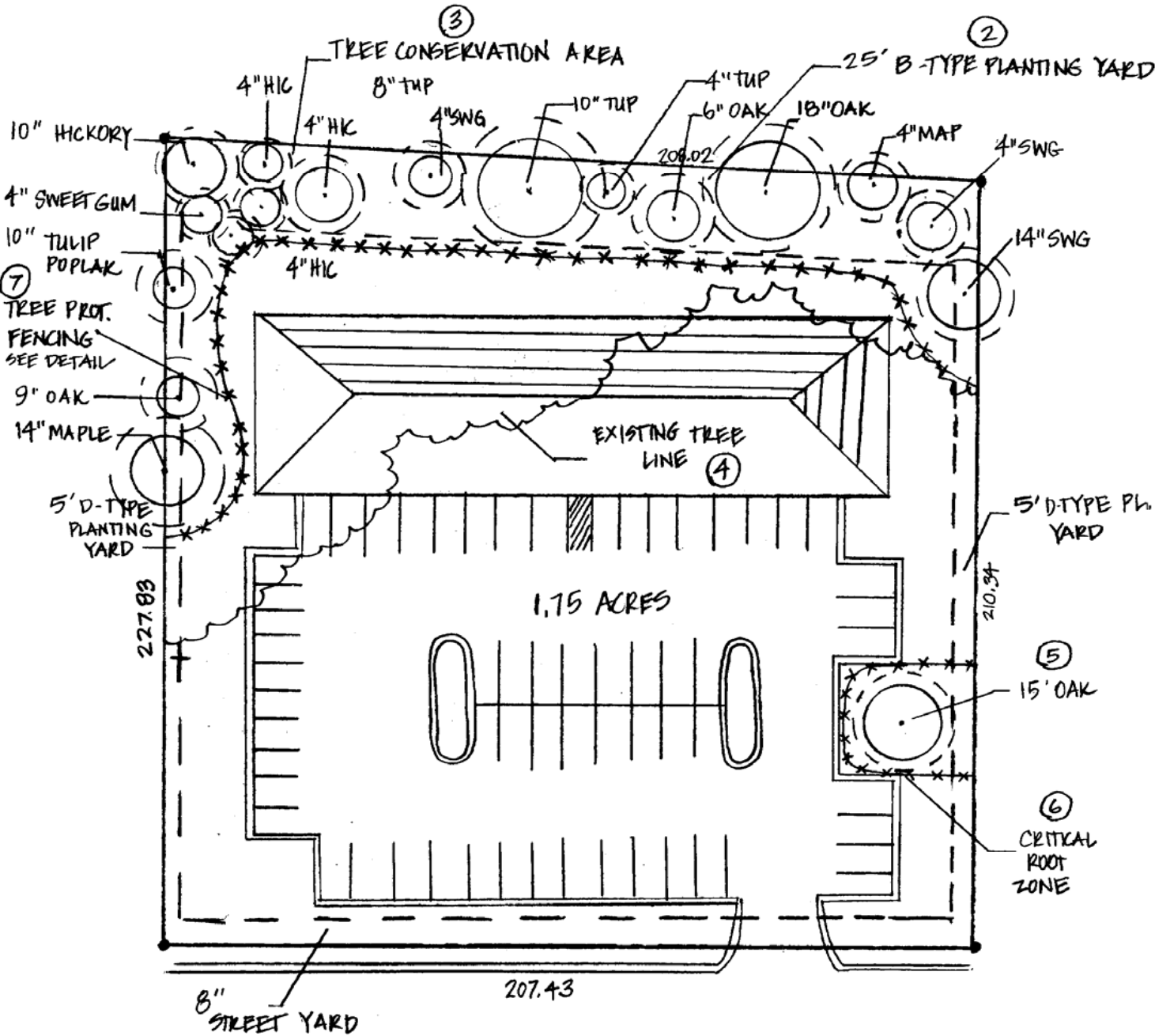
- 1. Tree protection fencing shall be installed prior to land disturbance. A civil penalty of \$500 per day may apply.
- 2. Contact the Urban Forester to set up a pre-construction meeting jointly with the Erosion Control Division of the Engineering and Inspections Department prior to land disturbance for inspection of tree protection fencing.
- 3. No parking, storage, dirt stockpiling, concrete washout or any other activities is permitted in the tree conservation areas.
- 4. Removal or damage to trees in the Tree conservation area will be subject to the penalties established in 30-5-4.8 of the Landscaping and Tree Preservation Ordinance.

7.



9.

Required TCA	7,457.45 sq. ft.
Actual TCA	7,771.60 sq. ft.



TREE PRESERVATION PLAN PREPARATION GUIDELINES

- 21. All tree preservation comments shall be made on the grading and erosion control plan sheet.
- 22. Identify and label the planting yards.
- 23. Identify and label the tree conservation area.
- 24. Show the existing tree line, if any.
- 25. Identify all trees to be preserved, including tree size and type. (See page 34 for tree survey options)
- 26. Identify the critical root zones of trees to be preserved.
- 27. Locate and detail the type of barrier to be used to protect the tree conservation area from damage. (Silt fencing can be used as tree protection where tree protection fencing and silt fencing overlap. Please make note on plan.)
- 28. Provide notes on plan.
- 29. Show, in a chart, the amount of **required** tree conservation area in square feet and the amount of **actual** tree conservation area in square feet.

NOTE: The requirements shown above are general requirements. On unique or complicated sites, additional information may be required.

1. GRADING AND EROSION CONTROL PLAN

COMMERCIAL SITE
100 NORTH AVENUE
GREENSBORO, NORTH CAROLINA

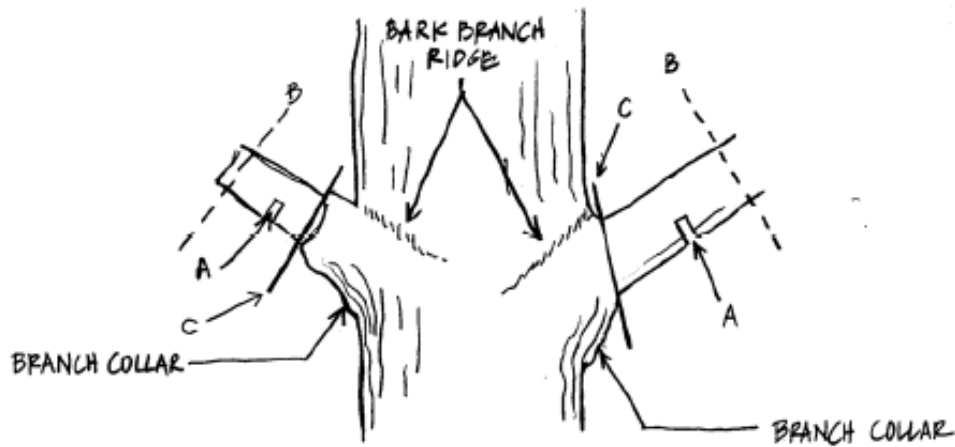
TREES TO PLANT NEAR OR UNDER POWER LINES

The following plants are some excellent selections for city and rural landscaping under power lines. These small trees do not grow taller than 25 feet. (*Please note that this list is for normal distribution power lines. There are different requirements for high transmission power lines.*)

COMMON NAME	SCIENTIFIC NAME
American fringe tree	<u><i>Chionanthus virginicus</i></u>
Amur maple	<u><i>Acer ginnala</i></u>
Blackhaw viburnum	<u><i>Viburnum prunifolium</i></u>
Buckeye	<u><i>Aesculus pavia</i></u>
Crabapple	<u><i>Malus spp.</i></u>
Crape myrtle	<u><i>Lagerstroemia indica</i> 'Cherokee'</u>
Crape myrtle	<u><i>Lagerstroemia indica</i> 'Dallas Red'</u>
Crape myrtle	<u><i>Lagerstroemia indica</i> 'Natchez'</u>
Crape myrtle	<u><i>Lagerstroemia indica</i> 'Powhatan'</u>
Crape myrtle	<u><i>Lagerstroemia indica</i> 'Tuscarora'</u>
Dahoon	<u><i>Ilex cassine</i></u>
Dogwood	<u><i>Cornus florida</i></u>
Doublefile viburnum	<u><i>Viburnum plicatum</i> var. <i>tomentosum</i></u>
Dr. Kassab holly	<u><i>Ilex</i> 'Dr. Kassab'</u>
Japanese apricot	<u><i>Prunus mume</i></u>
Japanese dogwood	<u><i>Cornus kousa</i></u>
Japanese flowering cherry	<u><i>Prunus serrulata</i> 'Accolate', 'Okame'</u>
Japanese maple	<u><i>Acer palmatum</i></u>
Little Gem magnolia	<u><i>Magnolia grandiflora</i> 'Little Gem'</u>
Northern bayberry	<u><i>Myrica pennsylvanica</i></u>
Osmanthus	<u><i>Osmanthus fortunei</i></u>
Redbud	<u><i>Cercis canadensis</i></u>
Saucer magnolia	<u><i>Magnolia soulangiana</i></u>
Serviceberry	<u><i>Amelanchier spp.</i></u>
Smoketree	<u><i>Cotinus coggygria</i></u>
Star magnolia	<u><i>Magnolia stellata</i></u>
Trident maple	<u><i>Acer buerferanum</i></u>
Witchhazel	<u><i>Hamamelis x intermedia</i></u>
Yaupon	<u><i>Ilex vomitor</i></u>

BASIC PRUNING STANDARDS

HARDWOOD



PRUNING PRINCIPLES FOR PRUNING LARGE BRANCHES

1. The first cut (A) undercuts the limb to prevent the bark from ripping down the tree.
2. The second cut (B) removes the limb.
3. The final cut (C) should be just outside the branch collar to remove the resulting stub.

Canopy Trees					
Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Abies firma</i>	Japanese fir	No	E	40 to 70	Sun
<i>Acer platanoides</i>	Norway maple	Yes	D	40 to 50	Sun
<i>Acer pseudo-platanus</i>	Sycamore maple	Yes	D	40 to 60	Sun
<i>Acer rubrum</i>	Red maple	Yes	D	40 to 60	Sun, partial shade
<i>Acer saccharum</i>	Sugar maple	No	D	50 to 75	Sun, partial shade
<i>Acer x freemanii</i>	Freeman maple	Yes	D	50 to 65	Sun
<i>Aesculus flava</i>	Yellow buckeye	No	D	50 to 70	Sun, partial shade
<i>Aesculus hippocastanum</i>	Common horse chestnut	No	D	50 to 75	Sun, partial shade
<i>Alnus glutinosa</i>	Common alder	Yes	D	40 to 60	Sun, partial shade
<i>Betula jacquemontii</i>	Jacquemontii birch; Whitebarked himalayan birch	No	D	30 to 50	Sun
<i>Betula lenta</i>	Sweet birch	Yes	D	40 to 55	Sun, partial shade
<i>Betula nigra</i>	River birch	No	D	40 to 70	Sun, partial shade
<i>Calocedrus decurrens</i>	Incense cedar	Yes	E	30 to 70	Sun, light shade
<i>Carpinus betulus</i>	European hornbeam	Yes	D	40 to 60	Sun, partial shade
<i>Carpinus betulus 'fastigiata'</i>	Upright European hornbeam	Yes	D	40 to 60	Sun, partial shade
<i>Carpinus caroliniana</i>	American hornbeam, Ironwood	Yes	D	20 to 30	Sun, partial shade
<i>Carya illinoensis</i>	Pecan	Yes	D	70 to 100	Sun, light shade
<i>Castanea sativa</i>	Spanish chestnut	Yes	D	80 to 100	Sun
<i>Catalpa speciosa</i>	Northern catalpa	Yes	D	40 to 70	Sun, partial shade
<i>Cedrus atlantica 'Glauca'</i>	Blue atlas cedar	Yes	E	60 to 100	Sun, partial shade
<i>Cedrus deodara</i>	Deodar cedar	Yes	E	40 to 70	Sun, light shade
<i>Cedrus libani</i>	Cedar of Lebanon	Yes	E	40 to 60	Sun
<i>Celtis occidentalis</i>	Hackberry	Yes	D	40 to 60	Sun
<i>Cercidiphyllum japonicum</i>	Katsuratree	No	D	40 to 60	Sun
<i>Chamaecyparis obtusa</i>	Hinoki falsecypress	No	E	50 to 75	Sun, light shade
<i>Chamaecyparis pisifera</i>	Japanese falsecypress	No	E	50 to 70	Sun
<i>Cunninghamia lanceolata</i>	China fir	No	E	30 to 75	Sun, partial shade
<i>Eucommia ulmoides</i>	Hardy rubber tree	Yes	D	40 to 60	Sun
<i>Fagus grandifolia</i>	American beech	No	D	50 to 80	Sun, partial shade
<i>Fraxinus americana</i>	White ash	Yes	D	60 to 80	Sun
<i>Fraxinus pennsylvanica</i>	Green ash	Yes	D	50 to 60	Sun
<i>Ginkgo biloba (male)</i>	Ginkgo	Yes	D	40 to 70	Sun
<i>Gleditsia triacanthos</i>	Honeylocust	Yes	D	30 to 70	Sun
<i>Gleditsia triacanthos inermis</i>	Thornless honeylocust	Yes	D	30 to 70	Sun
<i>Gordonia lasianthus</i>	Loblolly bay	No	E	30 to 50	Sun, partial shade
<i>Gymnocladus dioica</i>	Kentucky coffeetree	Yes	D	60 to 75	Sun
<i>Ilex opaca</i>	American holly	Yes	E	30 to 60	Sun, partial shade
<i>Juniperus virginiana</i>	Eastern redcedar	Yes	E	30 to 40	Sun
<i>Kalopanax pictus</i>	Castor-aralia	Yes	D	40 to 60	Sun
<i>Larix keampferi</i>	Japanese larch	No	D	50 to 70	Sun
<i>Liquidambar styraciflua</i>	Sweetgum	Yes	D	60 to 100	Sun, partial shade
<i>Liriodendron tulipifera</i>	Tuliptree, Yellow poplar	No	D	40 to 100	Sun
<i>Magnolia acuminata</i>	Cucumbertree magnolia	No	D	50 to 80	Sun, partial shade
<i>Magnolia grandiflora</i>	Southern magnolia	Yes	E	40 to 80	Sun, partial shade
<i>Metasequoia glyptostroboides</i>	Dawn redwood	Yes	D	50 to 90	Sun
<i>Nyssa sylvatica</i>	Black gum	No	D	40 to 60	Sun, partial shade
<i>Picea abies</i>	Norway spruce	No	E	40 to 60	Sun

Canopy Trees Continued

Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Picea glauca</i>	Alberta spruce	Yes	E	40 to 60	Sun, light shade
<i>Picea pungens</i>	Colorado blue spruce	Yes	E	30 to 90	Sun
<i>Pinus echinata</i>	Shortleaf pine	Yes	E	80 to 100	Sun
<i>Pinus elliotii</i>	Slash pine	Yes	E	60 to 80	Sun
<i>Pinus flexilis</i>	Limber pine	Yes	E	30 to 60	Sun, partial shade
<i>Pinus heldreichii</i>	Bosnian pine	Yes	E	70 to 90	Sun
<i>Pinus nigra</i>	Austrian pine	Yes	E	30 to 60	Sun
<i>Pinus rigida</i>	Pitch pine	Yes	E	40 to 60	Sun
<i>Pinus sylvestris</i>	Scotch pine	Yes	E	30 to 70	Sun
<i>Pinus taeda</i>	Loblolly pine	Yes	E	30 to 40	Sun, partial shade
<i>Pinus thunbergiana</i>	Japanese black pine	Yes	E	50 to 70	Sun
<i>Pinus virginiana</i>	Virginia pine	Yes	E	15 to 40	Sun
<i>Platanus acerifolia</i>	London plane tree	Yes	D	60 to 80	Sun
<i>Quercus acutissima</i>	Sawtooth oak	Yes	D	30 to 45	Sun, light shade
<i>Quercus alba</i>	White oak	Yes	D	60 to 100	Sun
<i>Quercus bicolor</i>	Swamp white oak	Yes	D	50 to 60	Sun, partial shade
<i>Quercus coccinea</i>	Scarlet oak	Yes	D	50 to 80	Sun
<i>Quercus falcata</i>	Southern red oak	Yes	D	70 to 90	Sun
<i>Quercus hemisphaerica</i>	Darlington oak	Yes	D	40 to 60	Sun, partial shade
<i>Quercus imbricaria</i>	Shingle oak	Yes	D	50 to 60	Sun
<i>Quercus laurifolia</i>	Laurel oak	Yes	D	40 to 60	Sun
<i>Quercus lyrata</i>	Overcup oak	Yes	D	35 to 45	Sun
<i>Quercus macrocarpa</i>	Bur oak	Yes	D	70 to 80	Sun
<i>Quercus nigra</i>	Water oak	Yes	D	50 to 75	Sun, partial shade
<i>Quercus nuttallii</i>	Nuttall oak	Yes	D	40 to 60	Sun
<i>Quercus palustris</i>	Pin oak	Yes	D	60 to 80	Sun
<i>Quercus phellos</i>	Willow oak	Yes	D	60 to 80	Sun
<i>Quercus prinus</i>	Chestnut oak	Yes	D	60 to 70	Sun
<i>Quercus rubra</i>	Red oak	Yes	D	60 to 75	Sun
<i>Quercus shumardii</i>	Shumard oak	Yes	D	40 to 60	Sun
<i>Quercus stellata</i>	Post oak	Yes	D	40 to 50	Sun
<i>Quercus virginiana</i>	Live oak	Yes	E	30 to 50	Sun
<i>Salix matsudana</i>	Scarlet Curls, Tortuosa	No	D	40 to 50	Sun
<i>Sassafras albidum</i>	Sassafras	Yes	D	30 to 60	Sun, partial shade
<i>Taxodium ascendens</i>	Pond cypress	Yes	D	70 to 80	Sun
<i>Taxodium distichum</i>	Baldcypress	Yes	D	50 to 100	Sun
<i>Tilia americana</i>	American linden	Yes	D	60 to 100	Sun
<i>Tilia cordata</i>	Littleleaf linden	Yes	D	30 to 50	Sun
<i>Tilia tomentosa</i>	Silver linden	Yes	D	40 to 70	Sun
<i>Tsuga canadensis</i>	Canadian hemlock	No	E	30 to 80	Sun, partial shade
<i>Tsuga caroliniana</i>	Carolina hemlock	No	E	30 to 70	Sun, partial shade
<i>Ulmus americana cvs</i>	American Elm cvs: Liberty Elm, Valley Forge Elm	Yes	D	75 to 125	Sun, partial shade
<i>Ulmus parvifolia</i>	Lacebark elm, Chinese elm	Yes	D	40 to 50	Sun
<i>Zelkova serrata</i>	Zelkova	Yes	D	50 to 80	Sun, partial shade

Understory Trees

Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Abies koreana</i>	Korean fir	No	E	15 to 30	Sun
<i>Acer barbatum</i> (A. <i>saccharum</i> ssp. <i>floridanum</i>)	Southern sugar maple	Yes	D	20 to 25	Sun
<i>Acer buergeranum</i>	Trident maple	Yes	D	25 to 35	Sun
<i>Acer campestre</i>	Hedge maple	Yes	D	25 to 35	Sun, light shade
<i>Acer cissifolium</i>	Ivy-leaved maple	No	D	20 to 30	Sun, partial shade
<i>Acer ginnala</i>	Amur maple	Yes	D	15 to 20	Sun, partial shade
<i>Acer griseum</i>	Paperbark maple	No	D	20 to 30	Sun, partial shade
<i>Acer japonicum</i>	Fullmoon maple	No	D	20 to 30	Sun, partial shade
<i>Acer leucoderme</i>	Whitebark maple, Chalk maple	Yes	D	25 to 30	Sun, partial shade
<i>Acer maxmowiczianum</i>	Nikko maple	No	D	20 to 30	Sun
<i>Acer palmatum</i>	Japanese maple	No	D	15 to 25	Sun, partial shade
<i>Acer spicatum</i>	Mountain maple	No	D	10 to 30	Sun, partial shade
<i>Acer triflorum</i>	Three-flower maple	No	D	20 to 30	Sun, partial shade
<i>Acer truncatum</i>	Purple blow maple	Yes	D	20 to 25	Sun
<i>Aesculus californica</i>	California buckeye	Yes	D	20 to 30	Sun, partial shade
<i>Aesculus glabra</i>	Ohio buckeye	No	D	20 to 40	Sun, partial shade
<i>Aesculus pavia</i>	Red buckeye	Yes	D	10 to 20	Sun, partial shade
<i>Aesculus sylvatica</i>	Painted buckeye	No	D	5 to 15	Sun, partial shade
<i>Alnus japonica</i>	Japanese alder	Yes	D	12 to 25	Sun, partial shade
<i>Alnus serrulata</i>	Tag alder	Yes	D	15 to 20	Sun, partial shade
<i>Amelanchier alnifolia</i>	Serviceberry	No	D	15 to 25	Sun, partial shade
<i>Amelanchier arborea</i>	Downy serviceberry	No	D	10 to 25	Sun, partial shade
<i>Amelanchier canadensis</i>	Shadbush	No	D	15 to 20	Sun, partial shade
<i>Amelanchier x grandiflora</i>	Apple serviceberry cvs: Autumn Brilliance, Princess Diana, etc.	No	D	20 to 25	Sun, partial shade
<i>Carpinus japonica</i>	Japanese hornbeam	Yes	D	20 to 30	Sun, partial shade
<i>Carpinus orientalis</i>	Oriental hornbeam	Yes	D	15 to 25	Sun, shade
<i>Cercis canadensis</i>	Eastern redbud	Yes	D	20 to 30	Sun, partial shade
<i>Cercis canadensis ssp. retisus</i>	Oklahoma redbud	Yes	D	20 to 30	Sun, partial shade
<i>Cercis canadensis ssp. texensis</i>	Texas redbud	Yes	D	15 to 20	Sun, partial shade
<i>Cercis chinensis</i>	Chinese redbud	Yes	D	8 to 12	Sun
<i>Chionanthus retusus</i>	Chinese fringe tree	Yes	D	15 to 25	Sun, partial shade
<i>Chionanthus virginicus</i>	Fringe tree	No	D	12 to 20	Sun, partial shade
<i>Cladrastis kentuckea</i>	Yellowwood	Yes	D	30 to 45	Sun
<i>Cornus florida</i>	Flowering dogwood	No	D	15 to 20	Partial shade
<i>Cornus kousa</i>	Kousa dogwood	No	D	20 to 30	Sun, partial shade
<i>Cornus mas</i>	Cornelain cherry dogwood	Yes	D	20 to 25	Sun, partial shade
<i>Cornus Stellar hybrids</i>	Stellar dogwood	No	D	15 to 30	Sun, partial shade
<i>Corylus avellana 'Contorta'</i>	Lauders walking stick	No	D	12 to 20	Sun
<i>Cotinus coggygria</i>	Smoketree	Yes	D	10 to 15	Sun
<i>Cotinus hybrids</i>	Smoketree cvs: Grace	Yes	D	10 to 15	Sun
<i>Cotinus obovatus</i>	American smoke tree	Yes	D	10 to 15	Sun
<i>Crataegus crus-galli</i>	Cockspur hawthorn	Yes	D	20 to 30	Sun
<i>Crataegus laevigata</i>	Scarlet hawthorn, English hawthorn	Yes	D	20 to 25	Sun
<i>Crataegus phaenopyrum</i>	Washington hawthorn	Yes	D	25 to 30	Sun
<i>Crataegus x lavalleyi</i>	Lavalle hawthorn	Yes	D	15 to 30	Sun

Understory Trees Continued

Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Crateegus viridis</i>	Green hawthorn	Yes	D	15 to 20	Sun, light shade
<i>Cryptomeria japonica</i>	Cryptomeria	Yes	E	50 to 60	Sun, light shade
<i>Cryptomeria japonica</i>	Cryptomeria cvs: Sekkan-Sugi, etc.	No	E	15 to 30	Sun, light shade
<i>Cupressus arizonica</i>	Arizona cypress	Yes	E	30 to 40	Sun
<i>Cupressus sempervirens</i>	Italian cypress	Yes	E	20 to 30	Sun
<i>Cydonia sinensis</i>	Chinese quince	No	D	10 to 20	Sun, partial shade
<i>Euscaphis japonica</i>	Korean sweetheart tree	Yes	D	20	Sun, partial shade
<i>Firmiana simplex</i>	Chinese parasol tree	No	D	30 to 45	Sun
<i>Halesia carolina</i> , <i>H. tetraptera</i>	Carolina silverbell	No	D	20 to 40	Sun, partial shade
<i>Halesia diptera</i>	Two-winged silverbell	No	D	15 to 30	Sun, partial shade
<i>Heptacodium miconiodes</i>	Seven-son flower	Yes	D	10 to 20	Sun, partial shade
<i>Hovenia dulcis</i>	Japanese raisin tree	Yes	D	30	Sun, light shade
<i>Ilex cassine</i>	Dahoon holly	Yes	E	20 to 30	Sun, partial shade
<i>Ilex decidua</i>	Possumhaw	Yes	D	20 to 30	Sun, partial shade
<i>Ilex pedunculosa</i>	Long stalk holly	Yes	E	20 to 30	Sun, partial shade
<i>Ilex vomitoria</i> 'Pendula'	Weeping yaupon holly	Yes	E	20 to 25	Sun, partial shade
<i>Ilex</i> x 'Nellie R. Stevens'	Nellie R. Stevens holly	Yes	E	20 to 40	Sun, partial shade
<i>Ilex</i> x 'Carolina Sentinal'	Carolina Sentinal holly	No	E	20 to 25	Sun, partial shade
<i>Ilex</i> x <i>attenuata</i>	<i>Ilex</i> cvs: Savannah, Foster, Sunny Foster, East Palatka, etc.	Yes	E	20 to 30	Sun, partial shade
<i>Juniperous saliciola</i>	Southern red cedar	Yes	E	30 to 40	Sun
<i>Juniperous scopulorum</i>	Rocky Mountain juniper cvs: Blue Haven, Skyrocket, Wichita Blue	Yes	E	15 to 40	Sun
<i>Koelreuteria bipinnata</i>	Southern Goldenraintree	Yes	D	20 to 30	Sun
<i>Koelreuteria paniculata</i>	Goldenraintree	Yes	D	20 to 40	Sun
<i>Lagerstroemia fauriei</i>	Japanese crapemyrtle	Yes	D	20 to 30	Sun
<i>Lagerstromia indica</i>	Crapemyrtle	Yes	D	15 to 30	Sun
<i>Lagerstromia indica</i> x <i>fauriei</i>	Crapemyrtle cvs: Choctaw, Muskogee, Natchez, Tuscarora, etc.	Yes	D	15 to 30	Sun
<i>Lithocarpus henryi</i>	Henry tanbark oak	Yes	E	25 to 30	Sun, partial shade
<i>Maackia amurensis</i>	Amur maackia	Yes	D	20 to 30	Sun
<i>Maclura pomifera</i>	Osage-orange	Yes	D	20 to 40	Sun
<i>Magnolia grandiflora</i> 'Little Gem'	Little Gem magnolia	Yes	E	15 to 20	Sun
<i>Magnolia hybrids</i>	<i>Magnolia</i> cvs: Ann, Betty, Judy, Mary Nell, Galaxy, etc	No	D	10 to 30	Sun
<i>Magnolia liliiflora</i>	Lily magnolia	No	D	12 to 15	Sun
<i>Magnolia macrophylla</i>	Bigleaf magnolia	No	D	30 to 40	Sun, partial shade
<i>Magnolia sieboldii</i>	Oyama magnolia	No	D	10 to 20	Partial shade
<i>Magnolia stellata</i>	Star magnolia	No	D	10 to 20	Sun
<i>Magnolia virginiana</i>	Sweetbay magnolia	No	E	10 to 60	Sun, partial shade
<i>Magnolia</i> x <i>soulangiana</i>	Saucer magnolia	No	D	15 to 25	Sun, partial shade
<i>Malus</i> spp.	Crabapple	Yes	D	15 to 25	Sun
<i>Morus australis</i> 'Unryo'	Contorted mulberry	Yes	D	20 to 30	Sun
<i>Nyssa ogeche</i>	Ogeche gum	No	D	30 to 50	Sun, partial shade
<i>Ostrya virginiana</i>	American hophornbeam or Ironwood	Yes	D	25 to 40	Sun, partial shade
<i>Oxydendrum arboreum</i>	Sourwood	Yes	D	20 to 30	Sun, partial shade
<i>Parrotia persica</i>	Persian ironwood	Yes	D	20 to 40	Sun, light shade

Understory Trees Continued

Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Persea borbonia</i>	Redbay	Yes	E	15 to 40	Sun, partial shade
<i>Phellodendron amurense</i>	Amur cork tree	Yes	D	30 to 45	Sun
<i>Photinia serrulata</i>	Chinese photinia	Yes	E	20 to 30	Sun
<i>Picea glauca</i> (dwarf cultivars)	Spruce cvs: Conica, etc	Yes	E	10 to 20	Sun, light shade
<i>Pinus bungeana</i>	Lacebark pine	Yes	E	30 to 50	Sun
<i>Pinus cembra</i>	Swiss stone pine	Yes	E	30 to 40	Sun
<i>Pinus korariensis</i>	Korean pine	Yes	E	30 to 40	Sun, partial shade
<i>Pinus mugo</i>	Mugo pine	Yes	E	15 to 20	Sun, partial shade
<i>Pinus wallichiana</i>	Himalayan pine	Yes	E	30 to 50	Sun, partial shade
<i>Pistacia chinensis</i>	Chinese pistache	Yes	D	25 to 40	Sun
<i>Poncirus trifoliata</i>	Hardy orange	Yes	D	8 to 20	Sun
<i>Prunus</i> 'Snow Goose'	Snow Goose cherry	No	D	20	Sun
<i>Prunus campanulata</i>	Taiwan cherry	No	D	20 to 30	Sun, partial shade
<i>Prunus caroliniana</i>	Carolina laurelcherry	No	E	20 to 40	Sun, partial shade
<i>Prunus cerasifera</i>	Purple leaf plum	No	D	15 to 25	Sun
<i>Prunus mume</i>	Japanese apricot	No	D	10 to 20	Sun, partial shade
<i>Prunus percica</i> (Corinthian hybrids)	Corinthian peach	No	D	20 to 25	Sun
<i>Prunus sargentii</i>	Sargent cherry	No	D	20 to 40	Sun
<i>Prunus serrulata</i>	Japanese cherry	No	D	15 to 25	Sun, partial shade
<i>Prunus subhirtella</i>	Higon cherry	No	D	20 to 40	Sun
<i>Prunus</i> x 'Okame'	Okame cherry	No	D	15 to 30	Sun
<i>Prunus</i> x <i>blireana</i>	Blireana cherry	No	D	15 to 20	Sun
<i>Prunus</i> x <i>cistena</i>	Purple leaf plum	No	D	7 to 14	Sun
<i>Prunus</i> x <i>yedoensis</i>	Yoshino cherry	No	D	30 to 40	Sun, light shade
<i>Pseudolarix amabilis</i>	Golden-larch	No	D	20 to 40	Sun
<i>Ptelea trifolia</i>	Hop tree	Yes	D	15 to 20	Sun, partial shade
<i>Pyrus calleryana</i>	Pear cvs: Cleveland, Aristocrat, Redspire, 'Holmford'	Yes	D	30 to 40	Sun
<i>Rhamnus caroliniana</i>	Carolina buckthorn	Yes	D	15 to 30	Sun
<i>Rhus typhina</i>	Staghorn sumac	Yes	D	15 to 25	Sun
<i>Robinia pseudoacacia</i>	Black locust	Yes	D	30 to 50	Sun
<i>Salix babylonica</i>	Weeping willow	No	D	30 to 50	Sun
<i>Sinojackia rehderiana</i>	Jacktree	No	D	15 to 20	Sun, partial shade
<i>Stewartia rostrata</i>	Upright stewartia	No	D	15	Sun, partial shade
<i>Stewartia koreana</i>	Korean stewartia	No	D	20 to 30	Sun, partial shade
<i>Stewartia ovata</i>	Mountain stewartia	No	D	10 to 15	Sun, light shade
<i>Stewartia pseudocamellia</i>	Japanese stewartia	No	D	20 to 40	Sun, partial shade
<i>Styrax japonica</i>	Japanese snowbell	No	D	20 to 30	Sun, partial shade
<i>Styrax malacodendron</i>	Silky stewartia	No	D	10 to 15	Partial shade
<i>Styrax obassia</i>	Fragrant snowball	No	D	20 to 30	Sun, partial shade
<i>Syringa reticulata</i>	Japanese tree lilac	No	D	20 to 30	Sun
<i>Thuja occidentalis</i>	Eastern arborvitae	No	E	10 to 30	Sun
<i>Thuja occidentalis</i>	American arborvitae	No	E	40 to 60	Sun
<i>Thuja orientalis</i>	Oriental arborvitae	No	E	18 to 25	Sun
<i>Thuja plicata</i>	Giant arborvitae	No	E	50 to 80	Sun, partial shade
<i>Thuja</i> x 'Green Giant'	Green Giant arbor	No	E	40 to 60	Sun
<i>Trachycarpus fortunei</i>	Windmill palm	Yes	E	15 to 35	Sun, partial shade

Understory Trees Continued

Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Trochodendron aralioides</i>	Wheel tree	No	D	10 to 20	Partial shade
<i>Ulmus alata</i>	Winged elm	Yes	D	30 to 40	Sun
<i>Vitex agnus-castus</i>	Vitex chastetree	Yes	D	15 to 20	Sun
<i>Ziziphus jujuba</i>	Common jujuba	Yes	D	15 to 20	Sun

Shrubs

Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Abelia chinesis</i>	Chinese abelia	Yes	semi	5 to 7	Sun, partial shade
<i>Abelia hybrids</i>	Abelia cvs: Edward Goucher, Little Richard, Sunrise, etc.	Yes	semi	Varies	Sun, partial shade
<i>Abelia x grandiflora</i>	Glossy abelia	Yes	semi	3 to 6	Sun, partial shade
<i>Abeliophyllum distichum</i>	White forsythia	Yes	semi	3 to 5	Sun, partial shade
<i>Abies concolor</i> (dwarf cultivars)	White fir	Yes	E	Varies	Sun, partial shade
<i>Aesculus parviflora</i>	Bottlebrush buckeye	Yes	D	8 to 12	Sun, partial shade
<i>Agave americana</i>	Century plant	Yes	E	3 to 6	Sun
<i>Amorpha canescens</i>	Leadplant	Yes	D	2 to 4	Sun
<i>Aucuba japonica</i>	Aucuba	Yes	E	6 to 10	Partial shade
<i>Berberis julianae</i>	Wintergreen barberry	Yes	E	6 to 8	Sun, partial shade
<i>Berberis koreana</i>	Korean barberry	Yes	D	4 to 6	Sun, partial shade
<i>Berberis thunbergii</i>	Japanese barberry	Yes	D	3 to 6	Sun, partial shade
<i>Berberis thunbergii</i> var. <i>atropurpurea</i>	Red barberry, Rose glow barberry	Yes	D	3 to 6	Sun, partial shade
<i>Berberis triacanthophora</i>	Threespine barberry	Yes	E	3 to 5	Sun, partial shade
<i>Berberis verruculosa</i>	Warty barberry	Yes	E	3 to 4	Sun, partial shade
<i>Berberis x chenaultii</i>	Chenault barberry	Yes	E	3 to 4	Sun
<i>Berberis x gladwynensis</i> 'William Penn'	William Penn barberry	Yes	E	3 to 4	Sun, partial shade
<i>Berberis x mentorensis</i>	Mentor barberry	Yes	D	5	Sun, partial shade
<i>Buddleia alternifolia</i>	Alternate-leaf butterfly-bush	Yes	D	10 to 20	Sun
<i>Buddleia davidii</i>	Butterfly-bush	Yes	D	10 to 15	Sun
<i>Buddleia golbosa</i>	Orange ball tree	Yes	semi	10 to 15	Sun
<i>Buddleia lindleyana</i>	Lindley butterfly-bush	Yes	E	4 to 6	Sun
<i>Buddleia loricata</i>	Butterfly-bush	Yes	E	4 to 5	Sun
<i>Buxus harlandii</i>	Harland boxwood	Yes	E	4 to 6	Sun
<i>Buxus hybrids</i>	Boxwood cvs: Green Mountain, Green Velvet, Wintergreen	Yes	E	2 to 4	Partial shade
<i>Buxus sempervirens</i>	Common boxwood	Yes	E	15 to 20	Partial shade
<i>Buxus sempervirens</i> 'Suffruticosa'	English boxwood	Yes	E	2 to 4	Partial shade
<i>Buxus sinica</i> var. <i>japonica</i>	Japanese boxwood	Yes	E	3 to 6	Partial shade
<i>Buxus sinica</i> (B. <i>microphylla</i>)	Little leaf boxwood	Yes	E	3 to 4	Partial shade
<i>Callicarpa americana</i>	American beautyberry	Yes	D	3 to 8	Sun, partial shade
<i>Callicarpa bodinieri</i>	Bodinier beautyberry	Yes	D	6 to 10	Sun, partial shade
<i>Callicarpa dichotoma</i>	Purple beautyberry	Yes	D	3 to 4	Sun, partial shade
<i>Callicarpa japonica</i>	Japanese beautyberry	Yes	D	4 to 6	Sun, partial shade
<i>Callistemon citrinus</i>	Lemon bottlebrush	Yes	E	10 to 15	Sun
<i>Camellia sasanqua</i>	Sasanqua camellia	Yes	E	6 to 10	Sun, partial shade
<i>Camellia sinensis</i>	Tea camellia	Yes	E	4 to 6	Partial shade
<i>Caryopteris x clandonensis</i>	Blue mist shrub, Blue caryopteris	Yes	D	2 to 3	Sun
<i>Ceanothus americanus</i>	New Jersey tea	Yes	D	3 to 4	Sun, partial shade
<i>Ceanothus x pallidus</i>	Ceanothus	Yes	D	3 to 4	Sun
<i>Cedrus deodara</i> (dwarf cultivars)	Cedar cvs: Snow Sprite, Compacta, etc.	Yes	E	Varies	Sun
<i>Cephalotaxus harringtonia</i>	Japanese plum yew	Yes	E	5 to 10	Partial shade
<i>Cornus sericea</i> ; (C. <i>stolonifera</i>)	Redosier dogwood	Yes	D	7 to 9	Sun, partial shade
<i>Cotoneaster apiculatus</i>	Cranberry cotoneaster	Yes	D	3	Sun, partial shade
<i>Cotoneaster dammeri</i>	Bearberry cotoneaster	Yes	E	1 to 2	Sun

Shrubs Continued

Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Cotoneaster divaricatus</i>	Spreading cotoneaster	Yes	D	5 to 6	Sun
<i>Cotoneaster horizontalis</i>	Rockspray cotoneaster	Yes	E	2 to 3	Sun
<i>Cotoneaster lacteus</i>	Parney cotoneaster	Yes	E	6 to 10	Sun, partial shade
<i>Cotoneaster microphyllus</i>	Little-leaf cotoneaster	Yes	E	2 to 3	Sun, partial shade
<i>Cotoneaster salicifolia</i>	Willowleaf cotoneaster	Yes	E	10 to 15	Sun, partial shade
<i>Cytisus scoparius</i>	Scotch broom	Yes	D	5 to 6	Sun, partial shade
<i>Deutzia gracilis</i>	Slender deutzia	Yes	D	3 to 4	Sun, partial shade
<i>Deutzia hybrids</i>	Deutzia cvs: Pink Minor, Strawberry Fields, Magician, etc.	Yes	D	2 to 4	Sun, partial shade
<i>Diervilla sessilifolia</i>	Southern bush-honeysuckle	Yes	D	3 to 5	Sun, partial shade
<i>Elaeagnus fruitlandi</i>	Elaeagnus	Yes	E	10	Sun, partial shade
<i>Elaeagnus pungens</i>	Thorny elaeagnus	Yes	E	10 to 15	Sun, partial shade
<i>Elaeagnus x ebbingii</i>	Elaeagnus	Yes	E	8 to 10	Sun, partial shade
<i>Euonymus alatus</i>	Winged euonymus	Yes	D	15 to 20	Sun
<i>Euonymus americana</i>	Strawberry bush	Yes	D	4 to 6	Partial shade
<i>Euonymus japonicus</i>	Japanese euonymus	Yes	E	5 to 10	Sun, partial shade
<i>Euonymus kiautschovicus</i>	Spreading euonymus	Yes	E	8 to 10	Sun, partial shade
<i>Fontanesia fortunei</i>	Fortune's fontanesia	Yes	D	10 to 15	Sun, partial shade
<i>Forsythia x hybrids</i>	Forsythia cvs: Beatrix Farrand, Lynwood Gold, Golden Times, Spring Glory, etc.	Yes	D	Varies	Sun, partial shade
<i>Forsythia x intermedia</i>	Border forsythia	Yes	D	8 to 10	Sun, partial shade
<i>Fothergilla gardenii</i>	Dwarf fothergilla	Yes	D	2 to 3	Sun, partial shade
<i>Fothergilla major</i>	Large fothergilla	Yes	D	6 to 12	Partial shade
<i>Gardenia augusta</i> (G. jasminoides)	Gardenia	Yes	E	4 to 6	Sun, partial shade
<i>Genista pilosa</i>	Silky-leaf woadwaxen	Yes	D	1 to 3	Sun
<i>Hamamelis mollis</i>	Chinese witchhazel	Yes	D	10 to 15	Partial shade, shade
<i>Hamamelis vernalis</i>	Vernal witchhazel	Yes	D	6 to 10	Sun, partial shade
<i>Hydrangea quercifolia</i>	Oakleaf hydrangea	Yes	D	4 to 6	Sun, partial shade
<i>Ilex 'China Boy', 'China Girl'</i>	China holly	Yes	E	8 to 10	Sun, partial shade
<i>Ilex cornuta</i>	Holly cvs: Carissa, Burford, Rotunda, Needlepoint, etc.	Yes	E	2 to 15	Sun
<i>Ilex cornuta</i> cvs.	Holly cvs: Burfordii, D'Or, O' Spring	Yes	E	10 to 25	Sun, partial shade
<i>Ilex crenata</i> cvs.	Holly cvs: Hetz, Helli, etc.	Yes	E	4 to 10	Sun, partial shade
<i>Ilex decidua</i>	Possomhaw holly	Yes	D	7 to 15	Sun, partial shade
<i>Ilex glabra</i>	Inkberry holly	Yes	E	6 to 8	Sun, partial shade
<i>Ilex latifolia</i>	Lusterleaf holly	Yes	E	20 to 25	Sun, partial shade
<i>Ilex vomitoria</i>	Yaupon holly	Yes	E	15 to 20	Sun, partial shade
<i>Ilex vomitoria</i> cvs.	Holly cvs: Nana, Schillings, Katherine, etc.	Yes	E	Varies	Sun, partial shade
<i>Ilex x 'Nellie R. Stevens'</i>	Nellie Stevens holly	Yes	E	15 to 25	Sun, partial shade
<i>Ilex x 'Emily Bruner'</i>	Emily Bruner holly	Yes	E	15 to 20	Sun, partial shade
<i>Ilex x 'Mary Nell'</i>	Mary Nell holly	Yes	E	10 to 20	Sun, partial shade
<i>Ilex x koehneana</i>	Koehne holly	Yes	E	Varies	Sun, partial shade
<i>Indigofera amblyantha</i>	Indigofera	Yes	D	4 to 6	Sun
<i>Indigofera heterantha</i>	Himalayan indigo	Yes	D	4 to 6	Sun
<i>Itea virginica</i>	Virginia sweetspire	Yes	D	3 to 5	Sun, partial shade
<i>Jasminum floridum</i>	Showy jasmine	Yes	E	3 to 5	Sun, partial shade

Shrubs Continued

Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Jasminum humile</i>	Italian yellow jasmine	Yes	E	5 to 7	Partial shade
<i>Jasminum nudiflorum</i>	Winter jasmine	Yes	D	3 to 4	Sun, partial shade
<i>Juniperus chinensis</i>	Chinese juniper cvs: Wintergreen, Spartan, Hooks, etc.	Yes	E	12 to 50	Sun
<i>Juniperus chinensis</i> (dwarf cultivars)	Chinese juniper cvs: Procumbens Nana, Berkshire, Sargentii, Hetzi	Yes	E	3 to 12	Sun
<i>Juniperus communis</i>	Common juniper	Yes	E	5 to 10	Sun
<i>Juniperus conferta</i> cvs.	Juniper cvs: Blue Lagoon, Blue Pacific, Boulevard, etc.	Yes	E	1 to 2	Sun
<i>Juniperus davurica</i> cvs.	Parsons juniper	Yes	E	2 to 3	Sun
<i>Juniperus horizontalis</i>	Juniper cvs: Blue Vase, Blue Chip, Wiltonii, etc.	Yes	E	1 to 2	Sun
<i>Juniperus hybrids</i>	Juniper cvs: Saybrook Gold, etc.	Yes	E	Varies	Sun
<i>Juniperus procumbens</i>	Japanese garden juniper	Yes	E	.5 to 1.5	Sun
<i>Juniperus rigida</i>	Needle juniper	Yes	E	15 to 20	Sun
<i>Juniperus sabina</i>	Savin juniper	Yes	E	4 to 6	Sun
<i>Juniperus scopulorum</i> (dwarf cultivars)	Juniper cvs: Blue Creeper, Skyrocket, etc.	Yes	E	Varies	Sun
<i>Juniperus squamata</i> cvs.	Juniper cvs: Holger, Blue Elf, Calgary Carpet, Blue Satr, etc.	Yes	E	Varies	Sun
<i>Juniperus virginiana</i> cvs.	Juniper cvs: Blue Mountain, Blue Cloud, Grey Owl, etc.	Yes	E	Varies	Sun
<i>Juniperus x media</i>	Juniper cvs: Seagreen, Old Gold, etc.	Yes	E	Varies	Sun
<i>Kalmia latifolia</i>	Mountain laurel	Yes	E	4 to 8	Sun, partial shade
<i>Kolkwitzia amabilis</i>	Beautybush	Yes	D	6 to 10	Sun
<i>Lagerstroemia indica</i> and hybrids	Crape myrtle cvs: New Orleans, Centennial, Chica, Tonto, Acoma	Yes	D	5 to 15	Sun
<i>Lantana camara</i>	Lantana	Yes	D	1 to 5	Sun
<i>Lavandula angustifolia</i>	Common lavender	Yes	E	1 to 2	Sun
<i>Lavandula x intermedia</i>	Hybrid lavender	Yes	E	1 to 2	Sun
<i>Lespedeza thunbergii</i>	Thunberg lespedeza	Yes	D	3 to 6	Sun
<i>Lespedeza bicolor</i>	Shrub bushclover	Yes	D	6 to 10	Sun
<i>Lindera benzoin</i>	Spice bush	Yes	D	6 to 12	Sun, partial shade
<i>Lonicera fragrantissima</i>	Winter honeysuckle	Yes	D	6 to 10	Sun, partial shade
<i>Lonicera nitida</i>	Boxleaf honeysuckle	Yes	E	6 to 8	Sun, partial shade
<i>Lonicera pileata</i>	Privet honeysuckle	Yes	E	2 to 3	Sun, partial shade
<i>Loropetalum chinensis</i>	Loropetalum	Yes	E	6 to 12	Sun, partial shade
<i>Loropetalum hybrids</i>	Loropetalum cvs: Plum Delight, Ruby, Fire Dance, etc.	Yes	E	4 to 10	Sun, partial shade
<i>Mahonia aquifolium</i>	Oregon grape holly	Yes	E	3 to 6	Partial shade
<i>Mahonia bealei</i>	Leatherleaf mahonia	Yes	E	6 to 7	Partial shade
<i>Mahonia fortunei</i>	Chinese mahonia	Yes	E	5 to 6	Partial shade
<i>Mahonia x media</i>	Mahonia cvs: Buckland, Charity, Faith, etc.	Yes	E	8 to 15	Partial shade
<i>Michelia figo</i>	Banana shrub	Yes	E	6 to 10	Sun, Partial shade
<i>Myrica cerifera</i>	Southern waxmyrtle	Yes	E	10 to 15	Sun, partial shade
<i>Myrica pensylvanica</i>	Northern bayberry	Yes	E	5 to 12	Sun, partial shade
<i>Nandina domestica</i>	Nandina	Yes	E	6 to 8	Sun, partial shade
<i>Nandina domestica</i> (dwarf cultivars)	Nandina cvs: Wood's Dwarf, Nana, Fire Power, Gulf Stream, etc	Yes	E	2 to 4	Sun, partial shade

Shrubs Continued

Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Perovskia atriplicifolia</i>	Russian sage	Yes	E	3 to 5	Sun
<i>Photinia serrulata</i>	Chinese photinia	Yes	E	20 to 25	Sun, partial shade
<i>Physocarpus opulifolius</i>	Ninebark	Yes	D	5 to 10	Sun, partial shade
<i>Picea abies</i> (dwarf cultivars)	Spruce cvs: Little Gem, Pendula, etc.	Yes	E	Varies	Sun
<i>Picea glauca</i> (dwarf cultivars)	Spruce cvs: Conica, etc.	Yes	E	Varies	Sun
<i>Picea pungens</i> (dwarf cultivars)	Spruce cvs: Globosa, Montgomery, Bakeri, Fat Albert, Foxtail, etc.	Yes	E	Varies	Sun
<i>Pinus mugo</i>	Mugo pine	Yes	E	15 to 20	Sun, partial shade
<i>Pinus mugo</i> (dwarf cultivars)	Pine cvs: Pumilio, Mughus	Yes	E	Varies	Sun
<i>Pinus nigra</i> cvs.	Pine cvs: Arnold Sentinel, Monstrosa, ec.	Yes	E	3 to 5	Sun
<i>Pinus rigida</i>	Pine cvs: Sherman Eddy, etc	Yes	E	15 to 20	Sun
<i>Pinus sylvestris</i> (dwarf cultivars)	Pine cvs: Nana, Hillside Creeper, etc.	Yes	E	Varies	Sun
<i>Pinus thunbergii</i> (dwarf cultivars)	Pine cvs: Nana, Thunderhead	Yes	E	Varies	Sun
<i>Pittosporum tobira</i>	Japanese pittosporum	Yes	E	10 to 12	Sun, partial shade
<i>Podocarpus macrophyllus</i> var. <i>maki</i>	Shrubby podocarpus	Yes	E	20 to 35	Sun, partial shade
<i>Potentilla fruticosa</i>	Shrubby potentilla	Yes	D	1 to 4	Sun, partial shade
<i>Prunus glandulosa</i>	Flowering almond	Yes	D	4 to 5	Sun, partial shade
<i>Prunus laurocerasus</i>	English laurel	Yes	E	10 to 18	Sun, partial shade
<i>Punica granatum</i>	Pomegranate	Yes	D	12 to 15	Sun, partial shade
<i>Pyracantha coccinea</i>	Scarlet firethorne	Yes	E	6 to 18	Sun
<i>Pyracantha hybrids</i>	Pyracantha cvs: Mohave, Mojave, Red Elf, Tiny Tim, etc.	Yes	E	Varies	Sun
<i>Pyracantha koidzumii</i>	Formosa pyracantha	Yes	E	8 to 12	Sun
<i>Raphiolepis hybrids</i>	Hawthorn cvs: Gulfgreen, Cuppertone	Yes	D	3 to 6	Sun
<i>Rhamnus fragula</i>	Alder buckthorn	Yes	D	10 to 12	Sun, partial shade
<i>Raphiolepis x delacourii</i>	Indian hawthorn, Yeddo hawthorn	Yes	E	3 to 4	Sun, partial shade
<i>Rhaphidophyllum hystrix</i>	Needle palm	Yes	E	6 to 8	Sun, partial shade
<i>Rhododendron austrinum</i>	Florida azalea	Yes	D	8 to 10	Partial shade
<i>Rhododendron calendulaceum</i>	Flame azalea	Yes	D	4 to 8	Partial shade
<i>Rhodotypos scandens</i>	Black jetbead	Yes	D	3 to 6	Sun, partial shade
<i>Rhus aromatica</i>	Sumac	Yes	D	2 to 6	Sun, partial shade
<i>Rhus glabra</i>	Smooth sumac	Yes	D	10 to 15	Sun
<i>Rhus michauxii</i>	Michaux's sumac	Yes	D	2 to 3	Sun
<i>Rhus typhina</i>	Staghorn sumac	Yes	D	15 to 25	Sun
<i>Rosa chinensis</i>	China rose	Yes	D	6 to 8	Sun
<i>Rosa 'Knock Out'</i>	Knock Out rose	Yes	D	4 to 5	Sun
<i>Rosa rugosa</i>	Rugosa rose	Yes	D	4 to 6	Sun
<i>Rosmarinus officinalis</i>	Rosemary	Yes	E	2 to 4	Sun
<i>Ruscus aculeatus</i>	Butcher's broom	Yes	E	1.5 to 3	Partial shade
<i>Sabal minor</i>	Dwarf palmeto	Yes	E	3 to 5	Sun
<i>Santolina chamaecyparissus</i>	Santolina, Lavender cotton	Yes	E	1 to 2	Sun
<i>Sarcococca confusa</i>	Sweet Box	Yes	E	3 to 5	Partial shade
<i>Sarcococca hookeriana</i>	Himalayan sarcococca	Yes	E	4 to 6	Partial shade
<i>Sarcococca orientalis</i>	Oriental sweetbox	Yes	E	2 to 3	Partial shade
<i>Sarcococca ruscifolia</i>	Fragrant sarcococca	Yes	E	2 to 3	Partial shade
<i>Sinojackia rehderiana</i>	Jacktree	Yes	D	15 to 20	Sun, partial shade

Shrubs Continued

Scientific Name	Common Name	Water Wise	E/D	Ht (Feet)	Exposure
<i>Spiraea cantoniensis</i>	Double Reeves spirea	Yes	D	4 to 6	Sun, partial shade
<i>Spiraea japonica</i>	Japanese spirea	Yes	D	4 to 5	Sun, partial shade
<i>Spiraea nipponica</i> 'Snowmound'	Snowmound spirea	Yes	D	3 to 5	Sun, partial shade
<i>Spiraea prunifolia</i>	Bridalwreath spirea	Yes	D	4 to 9	Sun, partial shade
<i>Spiraea thunbergii</i>	Thunberg spirea	Yes	D	3 to 5	Sun, partial shade
<i>Spiraea x bumalda</i>	Bumalda spirea	Yes	D	2 to 3	Sun, partial shade
<i>Spiraea x vanhouttei</i>	Vanhoutte spirea	Yes	D	6 to 8	Sun, partial shade
<i>Syringa pekinensis</i>	Peking lilac	Yes	D	15	Sun
<i>Taxus chinensis</i>	Chinese yew	Yes	E	5 to 10	Sun, partial shade
<i>Teucrium chamaedrys</i>	Wall germander	Yes	E	1 to 1.5	Sun
<i>Ulmus galbra</i> 'Horizontalis'	Tabletop scotch elm	Yes	D	15	Sun
<i>Viburnum acerifolium</i>	Maple-leaf viburnum	Yes	D	4 to 6	Partial shade
<i>Viburnum awabuki</i>	Chindo Viburnum	Yes	E	10 to 15	Sun, partial shade
<i>Viburnum pilcatum</i> var <i>tomentosum</i>	Doublefile viburnum	Yes	E	8 to 10	Sun, partial shade
<i>Viburnum tinus</i>	Laurustinus	Yes	E	6 to 12	Sun, partial shade
<i>Viburnum x pragense</i>	Pragense viburnum	Yes	E	8 to 10	Sun, partial shade
<i>Vitex agnus castus</i>	Chastetree	Yes	D	15 to 20	Sun
<i>Vitex negundo</i>	Chastetree	Yes	D	10 to 20	Sun
<i>Xanthorrhiza simplicissima</i>	Yellowroot	Yes	D	2 to 3	Sun, partial shade
<i>Yucca filamentosa</i>	Adam's needle yucca	Yes	E	2 to 4	Sun
<i>Yucca flaccida</i>	Weakleak yucca	Yes	E	1 to 2	Sun
<i>Yucca gloriosa</i>	Soanish dagger yucca	Yes	E	6 to 8	Sun

LAND USE CODE (LUC)

Please Note that this information has been taken from Permitted Use Table 30-4-5-1 of the City of Greensboro Development Ordinance. If there are any discrepancies, the Permitted Use Table takes precedence over this document.

USE TYPE	LUC
A	
ABC Stores (liquor)	3
Accounting, Auditing, or Bookkeeping	3
Administrative or Management Services	3
Advertising Agencies or Representatives	3
Advertising Services, Outdoor	4
Agricultural Chemical/Pesticide/Fertilizers	5
Agricultural Production (crops)	1
Agricultural Production (livestock)	1
Agricultural Products, Other	4
Aircraft Assembly	5
Aircraft Engines and Engine Parts, Manufacturing	5
Aircraft Parts and Auxiliary Equipment	5
Airports and Air Transportation Facilities	5
Ambulance Services	3
Ammunition	4
Ammunition, Small Arms	5
Amusement or Water Parks, Fairgrounds	4
Animal Feeder/Breeder	1
Animal Feeds (including dog & cat)	5
Animal Services (livestock)	3
Animal Services (other)	3
Animal Slaughter or Rendering	5
Animals and Animal Products, Other	5
Antique Stores	3
Apparel and Finished Fabric Products	4
Apparel, Piece Goods and Notions	4
Appliance Stores	3
Arms and Weapons	4
Artisans and Crafts	4
Arts & Crafts	3
Asbestos, Abrasive and Related Products	5
Asphalt Plants	5
Athletic Fields	1
Audio, Video and Communications Equipment	4
Auditoriums, Coliseums, or Stadiums	3
Auto Supply Sales	3
Automobile Parking (commercial)	3
Automobile Rental or Leasing	4
Automobile Repair Services, Major	4

USE TYPE	LUC
Automobile Repair Services, Minor	3
Automobile Towing and Storage Services	3
B	
Bakeries	3
Bakery Products	4
Banks, Savings & Loans or Credit Unions	3
Barber Shops	3
Bars	3
Baseball Clubs, Professional	3
Batteries	5
Batting Cages	3
Beauty Shops	3
Beer/Wine/Distilled Alcoholic Beverages	4
Beverage Products (alcoholic)	4
Beverage Products (nonalcoholic)	4
Bicycle Assembly	4
Bicycle Parts and Accessories	4
Billiard Parlors	3
Bingo Games	3
Boarding and Rooming Houses (9 or less)	1
Boat and Ship Building	4
Boat Repairs	4
Boat Sales	4
Books, Periodicals and Newspapers	4
Bookstores	3
Bowling Centers	3
Brooms and Brushes	4
Building Maintenance Services	3
Building Supply Sales (no storage yard)	3
Building Supply Sales (with storage yard)	4
Bulk Mail and Packaging	4
Burial Caskets	4
Bus Terminals	4
Business Associations	3
Business Incubators	3
C	
Cake Decorating Supply Stores	3
Camera Stores	3
Candle Shops	3
Car Washes	4

USE TYPE	LUC
Cemeteries/Mausoleums	2
Chemicals , Paints, and Allied Products	5
Chemicals and Allied Products	5
Churches	3
Clothing Alterations or Repairs	3
Clothing, Shoe and Accessory Stores	3
Clubs or Lodges	3
Coffee	4
Coin Operated Amusements	3
Coin, Stamp or Similar Collectable Shops	3
Colleges or Universities	3
Common Area Recreation & Service Facilities	1
Communication or Broadcasting Facilities	3
Communications Equipment	4
Computer and Office Equipment	4
Computer Maintenance and Repairs	3
Computer Sales	3
Computer Services	3
Concrete, Cut Stone, and Clay Products	5
Congregate Care Facilities	2
Contractors (no outside storage)	3
Contractors, General Building	4
Contractors, Heavy Construction	5
Contractors, Special Trade	4
Convenience Stores (with fuel pumps)	4
Convenience Stores (without fuel pumps)	3
Correctional Institutions	4
Cosmetic Shops	3
Costume Jewelry and Notions	4
Country Clubs with Golf Courses	1
Courier Service Substation	3
Courier Services, Central Facility	4
D	
Dairy Product Stores	3
Dairy Products	4
Dance Schools	3
Day Care Centers, Adult (5 or less, Home Occupation)	1
Day Care Centers, Adult (6 or more)	3
Day Care Centers, Child (16 or more)	3
Day Care Centers, Homes (15 or less, Home Occupation)	1
Department, Vanity or General Merchandise Stores	3
Drugs	5
Drugs and Sundries	4
Drugstores	3

USE TYPE	LUC
Durable Goods, Other	4
E	
Economic, Socio., or Educational Research	3
Electrical Components	5
Electrical Equipment	5
Electrical Goods	4
Electrical Industrial Apparatus, Assembly	4
Electrical Industrial Apparatus, Manufacturing	5
Elementary or Secondary Schools	3
Employment Agencies, Personnel Agencies	3
Equipment Rental & Leasing (no outside storage)	3
Equipment Rental & Leasing (w/outside storage)	3
Equipment Repairs, Heavy	4
Equipment Repairs, Light	4
F	
Fabric or Piece Good Stores	3
Fabricated Metal Products (including can Manufacturing)	5
Fabricated Valve and Wire Products	4
Family Care Homes (6 or less)	1
Family Care Homes (9 or less)	2
Farm Supplies, Other	4
Fats and Oils, Animal	5
Fats and Oils, Plant	4
Finance or Loan Offices	3
Finance or Loan Offices (no Drive-thru)	3
Fire Stations	3
Fish Hatcheries	4
Fish, Canned, Cured or Frozen	5
Flea Market, Indoor	3
Flea Market, Outdoor	3
Floor Covering, Drapery or Upholstery	3
Floor Coverings (excluding carpet)	5
Florists	3
Flowers, Nursery Stock & Florist Supplies	4
Food and Related Products, Miscellaneous	4
Food Stores	3
Forest Products	5
Forestry	1
Fortune Tellers, Astrologers	3
Fraternities or Sororities (University or College)	3
Fuel Oil Sales	4
Funeral Homes or Crematoriums	3
Furniture and Fixtures	4
Furniture and Fixtures Assembly	4

USE TYPE	LUC
Furniture and Home Furnishings	4
Furniture Framing	4
Furniture Repair Shops	3
Furniture Sales	3
G	
Garden Centers or Retail Nurseries	3
Gift or Card Shops	3
Glass	5
Glass Products from Purchased Fixtures	4
Go-cart Raceways	4
Golf Courses, Miniature	3
Golf Courses, Miniature	1
Golf Driving Ranges	3
Government Offices	3
Grain and Field Beans	5
Grain Mill Products	4
Groceries and Related Products	4
Group Care Facilities	2
H	
Hardware Stores	3
Hardware Stores	4
Hazardous & Radioactive Waste (transportation, storage, and disposal)	5
Heating Equipment, and Plumbing Fixtures	4
Heliports	5
Hobby Shops	3
Home Furnishings, Miscellaneous	3
Horticultural Specialties	2
Hospitals	3
Hotels or Motels	3
Household appliances	4
Household Audio and Video Equipment	4
I	
Ice	4
Industrial and Commercial Machinery	4
Insurance Agencies (carriers/ on-site claims)	3
Insurance Agencies (no on-site claims inspections)	3
J	
Jewelry and Silverware (no plating)	4
Jewelry Stores	3
Jewelry, Watches Precious Stones & Materials	4
K	
Kennels or Pet Grooming Services	3
L	
Labor Unions and Similar Organizations	3

USE TYPE	LUC
Land Clearing and Inert Debris Landfills, Major	5
Land Clearing and Inert Debris Landfills, Minor	
Landscape and Horticultural Services	4
Laundromats, Coin-Operated	3
Laundry or Dry Cleaning Plants	3
Laundry or Dry Cleaning Substations	3
Law Offices	3
Leather and Leather Products (no tanning)	4
Libraries	3
Lighting and Wiring Equipment	4
Livestock	5
Logging and Wood, Raw Materials	1
Luggage or Leather Goods Stores	3
Lumber and Other Construction Materials	5
Lumber, Millwork, and Veneer	4
M	
Machinery, Construction and Mining	5
Machinery, Farm and Garden	5
Manufactured Dwelling Parks	2
Manufactured Dwellings (Class AA)	1
Manufactured Housing and Wood Building	4
Manufactures Home Sales	4
Market Showrooms (Furniture, Apparel, etc.)	3
Martial Arts Instructional Schools	3
Maternal Care Homes (6 or less)	1
Maternal Care Homes (9 or less)	2
Measurement, Analysis & Control Instruments	4
Meat/Poultry, Packing & Processing (no rendering)	5
Medical or Dental Laboratories	3
Medical, Dental, and Surgical Equipment	4
Medical, Dental, or Related Offices	3
Metal Coating and Engraving	5
Metal Fasteners (screws, bolts, etc.)	4
Metal Processing	4
Metals	4
Millwork, Plywood, and Veneer	4
Minerals	5
Mining and Quarrying	5
Miscellaneous Retail Sales	3
Mixed Developments	3
Motion Picture Productions	3
Motor Vehicle Assembly	5
Motor Vehicle Parts and Accessories	4
Motor Vehicle Sales (new and used)	4

USE TYPE	LUC
Motor Vehicles	4
Motor Vehicles, Parts and Supplies	4
Motor Vehicles, Tires and Tubes	4
Motorcycle Assembly	4
Motorcycle Sales	4
Moving and Storage Services	4
Multi-family Dwellings (including Condominiums)	2
Multimodal Transit Centers	4
Museums or Art Galleries	3
Musical Instrument Sales	3
Musical Instruments	4
N	
Newsstands	3
Noncommercial Research Organizations	3
Nursing and Convalescent Homes	3
O	
Office Machine Sales	3
Office Uses Not Otherwise Classified	3
Optical Goods Sales	3
Orphanages	3
P	
Paint and Wallpaper Sales	3
Paint Ball Gaming Facilities, Outdoor	3
Paints and Varnishes	4
Paper and Paper Products	4
Paper Products (coating or laminating)	4
Paper Products (no coating or laminating)	4
Paperboard Containers and Boxes	4
Pawnshops	3
Pens and Art Supplies	4
Pest or Termite Control Services	3
Pet Stores	3
Petroleum and Petroleum Products	5
Petroleum and Related Products	5
Pharmaceutical Preparations	4
Photocopying and Duplicating Services	3
Photo finishing Laboratories	3
Photographic Equipment	4
Photographic Supplies	5
Photography (Commercial)	3
Photography Studios	3
Physical Fitness Centers	3
Plastics Materials	4
Plumbing and Heating Equipment	4

USE TYPE	LUC
Police Stations, Neighborhood	3
Post Offices	3
Pottery and Related Products	4
Preserved Fruits & Vegetables (no can manufacturing)	4
Primary Metals Products and Foundries	5
Printing and Publishing	4
Private Clubs or Rec. Facilities, (other)	3
Private Dormitories	2
Professional & Commercial Equipment & Supplies	4
Professional Membership Associations	3
Psychiatric Hospitals	3
Public Parks	1
Public Recreation Facilities	2
Pulp and Paper Mills	5
R	
Real Estate Offices	3
Record and Tape Stores	3
Recreational Vehicle Parks or Campsites	4
Recreational Vehicle Sales	4
Refrigerator or Large Appliance Repairs	3
Refuse and Raw Material Hauling	3
Refuse and Raw Material Transfer Points	4
Rehabilitation or Counseling Services	3
Research, Development, or Testing Services	3
Resins	5
Restaurants (drive-in)	3
Restaurants (no drive-thru)	3
Restaurants (with drive-thru)	3
Retreat Centers	3
Riding Stables	2
Rubber and Plastics, Miscellaneous	4
Rubber and Plastics, Raw	5
S	
Salvage Yards, Auto Parts	5
Salvage Yards, Scrap Processing	5
Sawmill or Planing Mills	5
School Administration Facilities	3
Scrap and Waste Materials	5
Security Services	3
Septic Tank Services	4
Service Stations, Gasoline	4
Sewage Treatment Plants	5
Sexually Oriented Businesses	3
Shelters for the Homeless	2

USE TYPE	LUC
Shelters, Emergency	
Shelters, Temporary	
Shoe Repair or Shoeshine Shops	3
Shooting Ranges, Indoor	3
Shooting Ranges, Outdoor	5
Signs	4
Single Family Detached Dwellings	1
Single Room Occupancy Residences (conversion)	
Single Room Occupancy Residences (new)	2
Skating Rinks	3
Small arms	4
Soaps and Cosmetics	4
Soil Preparation and Crop Services	4
Solid Waste Disposal (non-hazardous)	5
Solvent Recovery	5
Specialty Hospitals	3
Sporting & Recreational Goods and Supplies	4
Sporting Goods and Toys	4
Sporting Goods Stores	3
Sports & Recreation Clubs, Indoor	3
Sports Instructional Schools	3
Stationary Stores	3
Stock, Security, or Commodity Brokers	3
Stone Cutting, Shaping, Finishing (interior use)	4
Sugar and Confectionery Products	4
Surface Active Agents	5
Swim and Tennis Club	3
T	
Tanning Salons	3
Taxi Terminals	4
Taxidermists	3
Television, Radio, or Electronic Repairs	3
Television, Radio, or Electronic Sales	3
Textile Products (no dyeing & finishing)	4
Textile Products (with dyeing & finishing)	5
Theaters, Indoor	3
Theaters, Outdoor	4
Tire Recapping	3

USE TYPE	LUC
Tire Sales	3
Tires and Inner Tubes	5
Tobacco and Tobacco Products	4
Tobacco Products	5
Tobacco Stores	3
Tourist Homes (Bed & Breakfasts)	2
Townhouse Dwellings	2
Toys and Hobby Goods and Supplies	4
Travel Agencies	3
Truck & Utility Trailer Rent & Leasing, Light	4
Truck Driving Schools	3
Truck Stops	4
Truck Tractor & Semi Rental & Leasing, Heavy	5
Truck Washing	5
Trucking or Freight Terminals	5
Two Family Dwellings (Twin Homes or Duplexes)	1
U	
Used Merchandise Stores	3
Utility Company Offices	3
Utility Equipment and Storage Yards	5
Utility Lines and Related Appurtenances	
Utility Service Facilities (no outside storage)	4
Utility Substations	4
V	
Veterinary Services (livestock)	3
Veterinary Services (Other)	3
Video Tape Rental and Sales	3
Vocational, Business, or Secretarial Schools	3
W	
Wallpaper and Paint Brushes	4
Warehouses (general storage/enclosed)	4
Warehouses (self-storage)	4
Watch or Jewelry Repair Shops	3
Water Treatment Plants	4
Welding Shops	4
Wireless Telecommunications Towers	3
Wood Containers	4
Wood Products, Miscellaneous	5



TREE DISTURBANCE PERMIT **APPLICATION**

Tree Disturbance Permit is an official authorization which shall be issued by the City simultaneous to the issuance of a grading permit and prior to any tree disturbing activities. Tree disturbing activities include cutting and/or damage to the Critical Root Zone of live trees four (4) inches DBH or greater on sites not accompanied by a development plan, except as stated in 30-5-4.1(A) (Exemptions).

Today's Date: _____

Site Location: _____

Applicant Information:

Name: _____

Business Name: _____

Address: _____

Telephone: _____

Owner Information:

Name: _____

Address: _____

Telephone: _____

Size of property: _____

Zoning of property: _____

*Exemptions: Single family detached dwellings, two-family dwellings on their own lot, multifamily developments containing 8 or fewer dwelling units on a single zone lot, properties within or surrounding the Central Business District, property lines abutting dedicated street R-O-W which has remained unopened for at least 15 years, property lines abutting railroad R-O-W, tree removal on 3,000 square feet or less, property covered by an active forest management plan written by a North Carolina Registered Forester and with documentation provided to the City Urban Forester.

Type of work to be performed:

Size of area to be disturbed? _____

Is this property located in a watershed? _____

Tree Preservation Requirements for this Site:
(To be filled out by Urban Forester or Enforcement Officer)

1.

I, the undersigned, verify that the above information is accurate and correct. I also understand that the Land Disturbance Permit is an official authorization by the City, valid for one year, to perform the work listed above. I also understand that failure to disclose additional land disturbing activities will render this Permit null and void and that civil penalties may be assessed (see attached document). Furthermore, I have read and fully understand the "Tree Preservation Requirements for this Site" highlighted in the box above.

Signature of Applicant

Signature of Owner

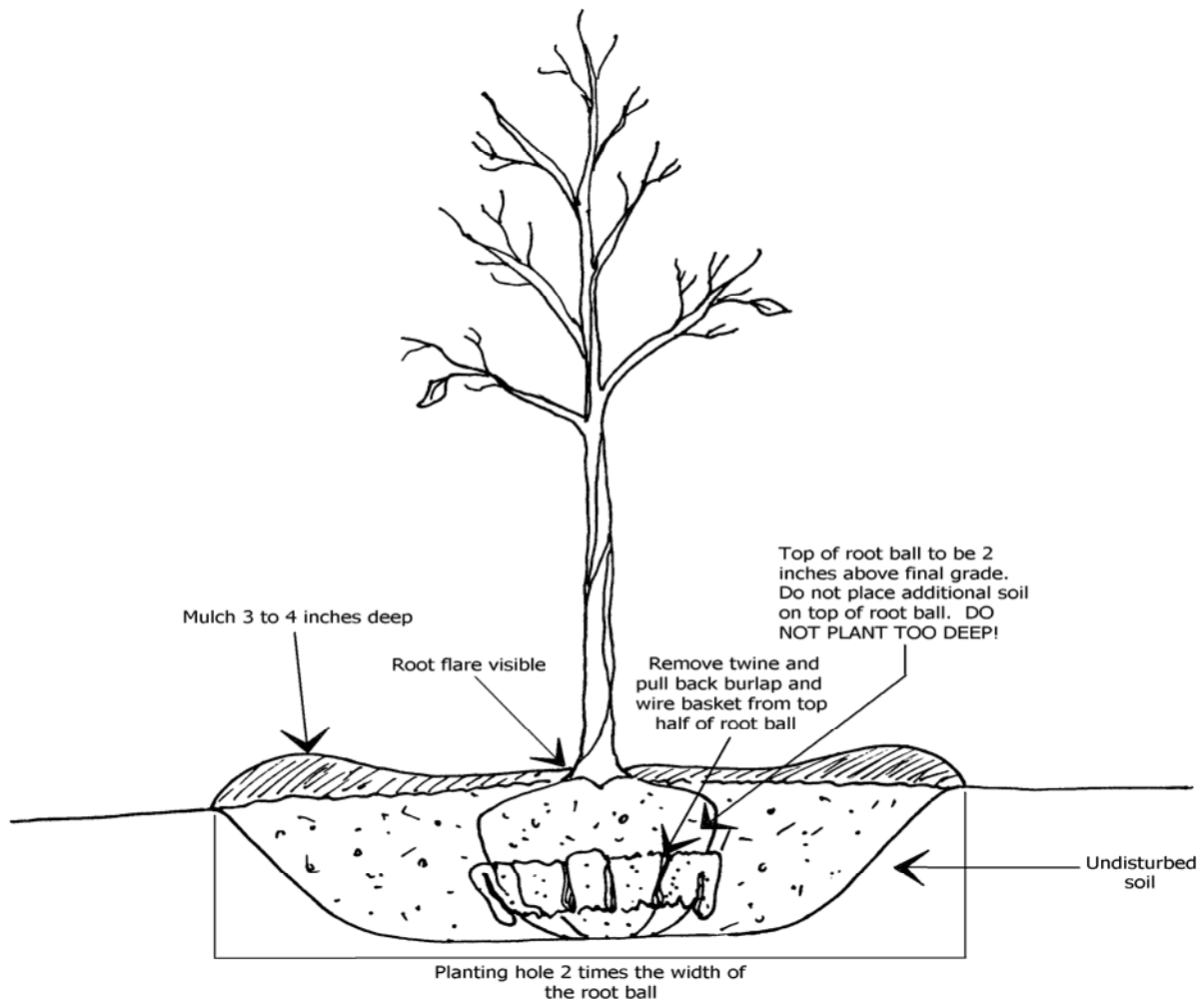
Date

Date

This application has been received and found to be complete:

Signature of Urban Forester or Enforcement Officer

Date



NOTES:

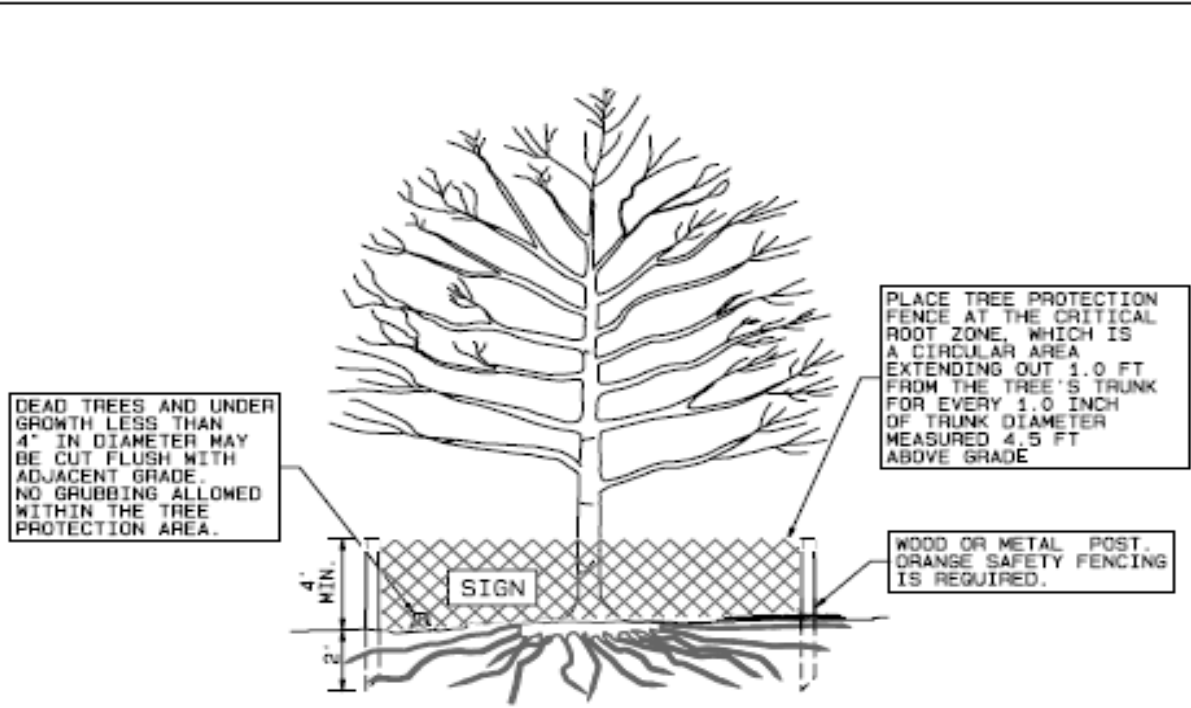
1. ALL TREES ARE TO BE NURSERY GROWN AND LOCALLY ADAPTED, BALL AND BURLAP (B&B) PREFERRED. MINIMUM TREE SIZE IS 2" CALIPER
2. REMOVE ALL TREATED OR PLASTIC-COATED BURLAP, STRAPPING, WIRE OR TWINE FROM ROOT BALL.
3. FOR CONTAINER GROWN TREES, CAREFULLY REMOVE THE PLANT FROM THE CONTAINER AND CUT ANY MATTED OR CIRCLING ROOTS.
4. WATER TREE AFTER PLANTING. FOR MULCH, USE PINE NEEDLES OR SEASONED MULCH AND USE NO MORE THAN 3 TO 4 INCHES DEEP.
5. TREE WRAP IS OPTIONAL.
6. STAKING IS OPTIONAL. RUBBER HOSE AND ROPE OR WIRE FOR STAKING IS NOT RECOMMENDED. 3/4" NYLON STRAP OR TREE BRACE STRAP IS PREFERRED. STAKING SHOULD BE REMOVED AFTER ONE GROWING SEASON.

C I T Y O F G R E E N S B O R O

STANDARD TREE PLANTING DETAIL

STD. NO.

REV.



- NOTES:
1. SEE PLANS FOR LOCATION OF ALL TREE PROTECTION FENCES.
 2. ALL TREE PROTECTION DEVICES MUST BE INSTALLED PRIOR TO LAND DISTURBANCE, INCLUDING THE CUTTING OF ANY TREES, AND MUST BE INSPECTED BY THE URBAN FORRESTER OR HIS DESIGNEE.
 3. NO GRADING, TRENCHING, FILLING OR STORING OF MATERIALS IS TO OCCUR IN THE TREE PROTECTION AREA.
 4. TREE PROTECTION FENCE MAY NOT BE REMOVED WITHOUT THE APPROVAL OF THE URBAN FORRESTER OR HIS DESIGNEE.
 5. THE TREE CONSERVATION AREA SHOULD BE DESIGNATED WITH "TREE CONSERVATION AREA" SIGNS POSTED VISIBLY ON THE OUTSIDE OF THE FENCED-IN AREA. SIGNS MAY NOT BE POSTED ON THE TREES. SEE EXAMPLE BELOW.



CITY OF GREENSBORO

STANDARD TREE PROTECTION DETAIL

STD. NO.	REV.
448	03-08 05-08